012-EXPRESS

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NOTE to Readers:
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Category:
Editorial

Header:
Dear Readers

„Do not lean out“ – in former times, this was written on small white lacquered metal labels attached next to the window frames of our German passenger coaches. The German translation was inscribed above and also the Italian and French translations were to be found. We already were quite cosmopolitan at that time! This seems to explain that the German railways were playing a decisive role in co-founding the European Community.

Today everything is so much easier. The ultramodern passenger coaches nowadays are air-conditioned and the windows remain closed – owing to the indoor climate. In former times, without having the chance of opening a window we probably would have died from asphyxiation, the more so as we were forced to travel in the smoking compartment since daddy wanted to enjoy his „Ernte 23“. The air condition, which doesn’t work properly in the majority of cases, wouldn’t have been able to manage this anyway! But this wasn’t the only reason why we enjoyed sticking our heads out of the window during stops at stations. When we heard the train conductor’s whistle blow and the train was gradually set in motion the magnificence was over – unless the train was forced to stop along the route extraordinarily and we were able to lean out again.

Today everything is different. Smoking on trains is forbidden and the closed windows in passenger trains can be seen as symbolic for what this closeness is expressing: no more leaning out since if one is sticking out his neck too far he probably will be the loser in the end. Just sit back and do nothing! Anyone who is exercising too courageously will risk his life in the end – the help from the courageous neighbour from “Mother Courage” country came too late. It is incredible how occurrent some incidents are coming back in our minds and even they are concerned with our railway.

The hip photographer Denis Martin – also a Frenchman – entitled one of his storming black-and-white shots „Do not lean out“ (shown on the Internet at: www.flickr.com/ denmartin/photos). The picture, which was taken in November 1989, shows the face of a man who is looking over the Berlin Wall from the Eastern side. It was twenty years ago when all of us West Germans were watching the media reports on how our neighbours in the East were “sticking out their necks” against their rotten regime. In the end the crowd prevailed in a peaceful community over the violent regime - but only because a minor part of the nation turned out to be courageous. Brave enough to overcome pain, indignity and fear and to subordinate their own lives to the welfare of the whole nation. They all would have deserved the Nobel Prize for Peace, which this year was awarded for (not yet) services rendered, sort of prophylactic. An appreciation of a special kind!

We should not forget that more than seventy years ago a mass movement was leading to a real disaster. There was someone who had “stuck out his neck” severely and much too far. But obviously not far enough in order to taking a deep plunge downwards. Instead of that people were captivated by him like never before and followed him on the road to ruin without giving it much thought. We all are glad that this is over. But history gets back to us, which is

exemplarily visualised in the movie “The Wave”. And in some places this is “reproduced” in reality.

And how far did we ourselves stick our heads out of the window in the past! When we, at the beginning of the 80s, were travelling to Wackersdorf (by train!) in order to rally against the building of the atomic reprocessing plant. When we were standing in human chains for hours to rebel against the stationing of intermediate-range missiles – and we always succeeded in the end. But there also were others who tried to put through their ideology and their individual understanding of politics and human community in quite a different way. The violence of a group of pseudo-intellignetsia, who made the whole nation shudder during the 70s and 80s. Their intention was marking the beginning of ruining democracy in our country – in the end they dashed against the courage of a large part of the population: for punishing by ignoring in this case was the maximum penalty.

Probably the list of pros and cons concerning “leaning the neck out of the window” can be continued endlessly. But we don’t want to bring an end to this historical excursion without taking a look at our hobby. In the long run a model railway and the associated magazine are also proverbially spoken history-making. So let’s sit back in our armchair and do nothing but watch our playground. Immerse yourself into the world of your own layout and bang! we are back in history. While watching the trains passing by we are indulged in the “good old days”. The specially created buildings and landscapes are slipping by and we are relaxing while we watch the route between „Höfen“ and „Meisenwinkel“. Proudly we observe the laboriously self-manufactured model pines and fir trees, majestically reaching to the model railway sky. The horses grazing in idyllically situated paddocks. A small pond with ducks between forest and grazing land. We are passing the front gardens of the trainmen’s settlement. Various sorts of vegetables are growing among the sunflowers. We are recalling memories of how laboriously we had carpentered the wooden fences and how hard it was to soldering the delicate brass railing onto the staircase of the watchman’s hut, which is moving past us just now! Filled with joy we reminiscence about the hours when we had created all this. Our train is leaning into a curve and for one more time we are leaning our neck out of the window – dead ahead our 85 is busily climbing the steep hill at the top of our train.
We close the window and only now we notice that it was the 24th on our Advent calendar.

Merry Christmas to you and your loved ones and we hope you are already looking forward to carrying on our hobby in the new year – cause the delightfulness of travelling can only be enjoyed to the full by travelling by rail

Yours sincerely

Wolfgang Häußler

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Rothenbühl during full moon: captured on the very beautifully designed gauge 1 layout of Alfred Abel.

Inlay: a lot of traffic at the gauge 0 harbour of Johannes Otterbach; our test: the BR78 by Kiss in gauge 0 and the BR85 by KM1 in gauge 1

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Category:
Showcase

Bar:
Newly discovered for all large gauge modellers

Header:
Fall Novelties

Intro:
In the following we want to give you some information concerning the novelties, which probably could be added to the Christmas gifts of your loved ones

Axstone
Gauge 0-2: New is a sand stone able to be moulded. The paste is dilutable with water and weatherproof after drying. The paste is available in nine different colours. TIP: on the website of Axstone you can watch a very good application video
Info: www.axstone.de

Bergischer Modellbau
Gauge 0 (1:45): Andreas Neidert now is delivering a locomotive driver construction-set with colour chart for all Bachmann Spectrum Davenport locos (0n30). The figure can alternatively be ordered in an already painted state or completely unpainted. The construction set can be converted to other locos.
The Santa Claus set now is available in three different versions.
All construction materials, such as the brick material for example, are now also offered as resin-made raw material, which can be colorized individually.
Info: www.bergischermodellbau.de

Danki-Modelle
Gauge 1: Mr Sauer now is delivering the MAN F8 on a scale of 1:32 as a truck tractor and as a „Deutsche Bundesbahn“ version. The excellently detailed model is handmade from plate and consists of 521 single components. The model is available with or without roof arch or canvas cover and in three different colours: red, green and blue. The number of items is restricted to 600.

PLEASE NOTE: exclusively for all 012-EXPRESS readers the validity of the anniversary price list was extended to 31st December 2009! All models can directly be ordered at Danki website or at:
DANKI-Modelle
Bahnhofstr. 4
D-92726 Waidhaus
Phone: +49 - 9652 8144990
E-mail:karlsauer@danki-modelle.de
When ordering please indicate the „Schaufenster 012-EXPRESS Heft 12“ to ensure that you come to enjoy the price reduction!

In addition, the trailer for the F8 und the Mercedes bus O 66OO H Pullmann from 1954 was announced.

Info: www.danki-modelle.com

FGB
Gauge 2: New are the solid disc wheels according to NEM, which are made from steel. V-spoked wheel sets with stainless-steel wheel rims are also available now. The wheel centre is manufactured from brass precision casting and painted. All axles are unconnected.
Info: www.fgb-berlin.de

J&P Modellbau
Gauge 0: The model of the DRG/DR VT170 (DB: VT70) with trailer vehicle VB140 comes from Dresden. This small series model made from metal and synthetic material is entirely hand-made. The delicate detailing is convincing. The drive is effected by both axles. The individual transmissions are installed with three-point bearings and equipped with flywheel mass each.
Both, interior furnishing and cab replica are in accordance with the respective Epoch. The model is equipped with spring buffers and spring-mounted screw couplings. The passenger compartment is illuminated and the headlight (trailer vehicle with taillight) also is lit and changing in direction of travel. Railcar and trailer vehicle are featuring a digital interface (NEM 652). For an extra charge the digital package including a sound decoder can be obtained. The smallest driveable radius is 800 mm for the VT, for trailer vehicle operation it is 1,000 mm. This model is available in Epoch II and III versions. Ordering directly at J&P.
Info: www.jundp-modellbau.de

Kiss
Gauge 0,1: The BR 78 in gauge 0 and the BR 03 in gauge 1 were delivered recently (please refer to our test report in this issue). For the first time the BR 03 was equipped with vertical light inside the lanterns. This model is also equipped with another novelty: a moveable lubrication pump drive. Both locos are possessing prototypical elliptic spokes.
Especially announced for all gauge 0 railway modellers was the BR 01.10 model. This loco will be available with historic or reconstructed boiler for Epoch III and IV.
Info: www.kiss-modellbahnen.de

KM1
Gauge 1: Meanwhile all versions of the BR85 were delivered. Please refer to our test report in this issue.
At the time of going to press the four-axle luggage wagons also were finished and they probably are already in delivery.
We are anxious to see the „Erlkönig“, the BR18 and the complete “Rheingold” train. The delivery is expected in midyear 2010.
As a special novelty KM1 is offering their beautiful model pictures as work of art. The very decorative pictures with a size of 45 x 30 cm are laser-engraved in birch-wood. The first picture is the model of the BR 01.10.
Info: www.km-1.de

Lenz
Gauge 0: The versions „VTG“ and „EVA“ of the new tank vehicles were recently delivered. It is a common practice at the company Lenz to build the undercarriage of their wagons from metal and equip them with spring buffers and the couplings with KKK. A model of the original screw coupling is enclosed in delivery. Due to the large number of advance bookings Lenz has already started producing the second edition with new wagon numbers.

Also new is the luggage wagon Pwi-31a; you can read about it in our vehicle-portrait in this issue.
Info: www.spur0.de

Lokführer Lukas
Gauge 1: The signal and switch tower „Sinsheim“ is about to being delivered. The resin-cast model is an accurate replication of the original; all details of this beautiful building are meticulously replicated. The windows are milled. The roof structure is made from wood and the roof panels are already planked with roofing paper. The stair railing is soldered from brass profiles. The door in the second floor can be opened. The complete interior furnishing is consisting of desks, control board with track plan (DB version), locking frame with wire gear (state railway version is under way), wardrobe and shelves can be ordered separately. The signal and switch tower can be ordered as finished model or as a construction-set (with or without patina, illumination and interior furnishing) directly from the manufacturer.
Info: www.lokfuehrer-lukas.de

Lotus Lokstation
Gauge 2: New in the product range is the railway inspection trolley BM35 Club 760. The model (total length over buffers: 207mm) is made from synthetic material and separately attached metal components. The electricity discharging is effected via the stainless steel wheels. The model is powered via a Bühler engine with Ms worm. The warm-white illumination is made via 4 LEDs. The headlight remains unlighted. The laborious window construction with individually insertable windowpanes is covered with black welting. The model can be used for analogue and digital operation and is equipped with Lenz decoder and original sound.
In addition to the “Heeresfeld” locos now a milk float was delivered. Until 1957 the SKGLB gondola car Kwd 5302 was used as milk float wagon on the route Salzburg-Itzling - Bad Ischl.
Now also a sophisticated version of the (LGB) ÖBB HF 2092.02 is available. The loco is equipped with a DCC decoder and sound module. On this model almost all superstructures and attachments had been modified, housing and components have been replaced and weathered and exquisite details have been added.
Info: www.lotuslok.at

Modellbahn-Art-Studio
Gauge 1: Just in time for Christmas the new Santa Claus is coming … accompanied by a mailman with his carrying bag and bike, in order to cope with the tons of Christmas mail. The delicate bicycle is completely made from brass components and hand-painted. Merry Christmas!
Info: www.masro.de

Schienenreiniger
Gauge 0-2: A very useful accessory was introduced by the company „Der Schienenreiniger“: the “rail cleaning mop”, which now also is available for gauge 1 and 2. A wet-mop head with an aluminium telescope bar, extendable to 1 or 2 metres is equipped with a tilt and swing-joint. With this cleaning support it is possible to clean especially awkward track areas – for example underneath catenary, bridges and tunnels.
The cleaning tissue is consisting of high-quality wool, which does not build-up electrostatic charges. A special track cleaning liquid and a care oil are also offered. In addition to the

cleaning head a magnetic head is available, which can be used to remove screws, nails and metal abrasion and so on.
Info: www.schienenreiniger.de

Schuco
Gauge 0 (1:43): New at the range of Schuco is the „Froschauge“: the model of the Unimog U 401, which had been built from 1953 till 1956 and it is a common practice at Schuco that it is completely built from metal. The typical driving cab in the front area with split windscreen and hood is precisely replicated. With its small loading platform the U 401 is particularly suitable for for equipment and load forwarding.
Info: www.schuco.de

Stangel
Gauge 1: A very nice semi-relief pharmacy building for rows of townhouses comes from Zgierz. The construction-set from sturdy laser-cut cardboard also contains plastic windows, guttering and rainwater pipes. The shop window opens up the view onto the typical pharmacy furnishing. The dimensions are: height: 185, depth: 105, width: 310 mm. A corresponding townhouse can also be purchased.
Info: www.stangel.pl

Zimo
Gauge 0-2: Meanwhile the MX32 throttle is completed. The touch-screen and the key arrangement are carried out in the familiar ZIMO design. The powerful inner workings are consisting of a 32-bit microcontroller of the latest construction type, several MB RAM and 1 GB memory, in order to implement comfortable operating and programming procedures. The speedometer and other indicating instruments are replicated in a realistic way and the operating locomotives are displayed as pictures.

For future versions it is planned to equip the remote control unit with a creation and handling feature for signal boxes (including magnifying and scrolling function). The USB port at the MX32 offers the possibility of inserting a memory stick for software updates and the connection to a standard computer keyboard, for example for the convenient entering of loco names.
Info: www.zimo.at

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Category:
Original & Model

Bar:
Series 78

Header:
The Speedy Sprinter

Intro:
Primarily designed for operating express traffic on branch lines: the tender locos series 78. Due to the release of the Kiss BR78 on a scale of 1:43,5 we introduce this loco, which was highly appreciated by the railway employees

Author: Klaus-Gerd Schoeler
Pictures: Manfred Weihrauch (2), Slg. Thomas Obst (2)

The Prussian State Railway used many different tender locomotives for passenger transportation on branch lines and short-range routes. Although the tender loco T10, later series 76, was able to cope with the given weight of the trains, but since it was built in an asymmetric way (2'C undercarriage) the reversing characteristics were absolutely dissatisfying. However, this was very important for the fast traffic between the terminus stations Wiesbaden and Frankfurt as well as along other regular routes.

By order of the Prussian State Railway, the locomotive factory Vulcan and Hinrich Lübken designed the T18 and the later BR78. The T10 as well as the T 18 were based on the successful P8. Due to the bad experiences, which had been made with the T10 a completely symmetrical undercarriage was built, the driving wheel and coupling wheel sets were reduced to a diameter of 1,650 mm and the large clearance between driving wheel set and rear coupling wheel set, which was characteristic for the P8, was not adopted.
The BR78 was equipped with a 2'C 2' undercarriage, which ran in a 30 mm sheet-metal frame with cross-bracing. This is why no free view into the undercarriage is possible. The loco is executed as a superheated steam loco with two cylinders and equipped with a Heusinger drive. The driving and coupling wheels were carried out with a diameter of 1,650 mm, the inducer and trailing wheels with 1,000 mm.

Subtitle:
Souped-up branch line loco

The total length over buffers was 14,8 m and the total weight of the loco was 100 tons, which ensured an application on branch lines. In the beginning the loco had a maximum speed of 90 km/h, which was increased to 100 km/h by measures in undercarriage (drilling up the counterbalances) and drive. The induced power was 840 kW.

In the year 1912 the company Vulcan delivered the first T18. The first ten locomotives were implemented at Ruegen in order to improve dealing with the enormously increase traffic on this island. The other reason was that the manufacturer was located nearby for doing any necessary rectifications. Right from the beginning the T18 stood the test of time and was able

to hauling the heavy traject trains to Sweden without difficulty and for this reason the T12 (BR74.4), which had to do double heading services from time to time, became redundant.

In 1915 the province of Hesse received the first T18 locos, which allowed for withdrawing the unsatisfying T10 locos from the urban route Wiesbaden-Frankfurt. And further orderings of locos for the local traffic in the Rhine-Ruhr area followed.
Because of the Prussian numbering scheme and the stationing at different directorates Essen was chosen to be the home Rw and the engines received the number group 8400.

Starting with the foundation of the DRG the T18 has been renamed to BR78. Since this loco was really successful the DRG purchased more locos of this type after 1922 and the company Henschel also became a manufacturer. In the year 1924 the last BR78 was delivered, in total there were 544 identical tender locos and other suppliers were the companies Hanomag and Franco-Belge.
The DRG utilized these versatile locos across the whole country, in Hamburg, Nürnberg, Augsburg and Munich and their wide distribution was similar to the P8 or the BR38. In the year 1941 the DRG had listed approximately 500 locos. All of them came through the war almost without any damages and the later DB took over or re-utilized 377 locos. At a later date the 32 SAAR railway owned locos followed. 50 locos remained in the former GDR and all other remaining engines were operating at the SNCF, the Polish State Railway and in Turkey.

The DB concentrated a good deal of tender locos at the Rw Hamburg, where they replaced the overcharged 74 locos and took over the whole rapid transit to a greater or lesser extent. Because of their good quality characteristics the DB equipped several locos with push/pull equipment, which was used until the end of 1960. Due to the upcoming diesel traction the utilization of the BR78 decreased more and more and they retired from push/pull operation first. The V100 with an increased engine power finally sealed the fate of the BR78. As from 1969 they only were to be found in Saarbrücken, Mayen, Tübingen and Rottweil. All remaining locos were concentrated at these Rws. The Rottweil 78 246, which had been the last remaining BR78 typed loco at the DB was withdrawn from service at the end of December 1974, after more than 60 years of operation.

Subtitle:
Air-permeable roof

The long insertion of this type of loco and the large number of pieces resulted in necessary modifications during the construction period. One striking modification, which was outwardly visible, was the innovative ventilation top frames on the roof. The conversion from gas to electric lighting obviated the need for the gas boiler, which was located in the back-wall of the tender underneath the coal box. In return the electric generator was placed in the front area of the boiler. All locos from 1992 onwards, which were delivered to the DRG received a different type of boiler with an additional feed dome and square sand boxes. At a later date the feed domes were displaced to the centre of the boiler.
All DB locos, which were converted for push/pull operations, received control wires and inductive train safety devices.

Box:

The investigations in respect on the original are relied on the Internet to a large extent. A real expert of this series is **Klaus D. Holzborn** (www.78er.de).

Further references:

- Ebel / Knipping / Wenzel: *Die Baureihe 78, Bewährt in sechs Jahrzehnten: Preußens T 18*, EK-Verlag, Freiburg 1990
- Dietmar Falk: *Die schnelle Preußin. Erinnerung an die T 18*. In: *LOK MAGAZIN*. Nr. 265/Jahrgang 42/2003. GeraNova Zeitschriftenverlag GmbH München

Facts on the original BR78

Piece number:	544
Manufacturer:	Vulcan, Hanomag, Henschel, Franco-Belge
Years of construction:	1912 - 1927
Withdrawal from service:	1975
Type:	2'C2'-h2t (version Pt 37.17)
Total length over buffers:	14.800 mm
Maximum sped:	90 km/h (from 78 010 onwards: 100 km/h, after drilling out the counterbalances)
Indicated power:	840 kW
Driving wheel diameter:	1.650 mm
Bogie wheel diameter:	1.000 mm
Weight:	100 t
Number of cylinders:	2
Cylinder diameter:	560 mm
Piston stroke:	630 mm
Boiler overpressure:	12 bar
Grate area:	2,44 m²
Superheat surface:	49,20 m²
Evaporative surface:	138,34 m²

Picture headers

No.	Text
1 + 2	Almighty steam is produced by the „Lengerich 78 468" while departing Solingen main station – one hour later at full speed it is leaning into the curve near Gruiten (large picture)
3	Those were the days: The DB 78 126 at the Rw Wuppertal-Vohwinkel

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Category:
Original & Model

Bar:
Testing the BR78 by Kiss in a scale of 1:43,5

Header:
The speedy „78“

Intro:
In launching series 78 the company Kiss made a long-cherished wish of gauge 0 enthusiasts come true – a perfectly implemented model

Author: Klaus-Gerd Schoeler
Pictures: Manfred Weihrauch

From my own schooldays I can remember the “78”: the remarkable accelerating power when the train was behind schedule and locomotive driver and heater were trying to bring out the best in the loco, which was hauling a train with 4 y4g wagons! I also do remember some replacement services when a BR78 had to haul an express train on the Oberhausen-Arnheim route. And I was mourning the replacement of the BR 78 by the ET30 these days. Therefore I can understand all gauge 0 enthusiasts who are dreaming of a model of this particular loco all the more.

Mr Kiss kindly provided us with a DB-Epoch III loco with push-pull equipment for testing purposes.

The loco was sent to us in a covering box filled with polystyrene chips, where the real loco carton was embedded safely. The model itself is supported by smooth moulded foam, which ensures safe shipping. Due to its little weight compared to gauge 1 locomotives shipment via parcel service should not cause any problems. In case reshipment is required this fact should not be ignored.
The unwrapping of the loco, which is standing on a thin board with milled grooves, is somewhat complicated, though.
A short and colourful manual is attached, which mainly contains clues for assembling the decoder, some information on the original and notes with regard on operating the loco. Accessory parts such as piston rod protection tubes, a set of close-fitting supports for the inductive train safety devices and wind deflectors are added.

I was a little excited when I unwrapped the loco and saw the delicate model. At the sight of the numerous details I asked myself if I would manage to grip and place this loco on the tracks securely. This is done without any problem if one is mustering some courage and acts with care. The first impression was absolutely positive. I was surprised in sight of the delicately wrought components. A real BR78 was standing in front of me – this model is truly reproducing the sturdy Prussian tender loco.

Subtitle:
Technology

The loco is almost made from brass and has a respectable weight of approximately 3 kg. A Faulhaber Glockenanker engine is powering the central wheel set and the transmission is actuated via coupling rods onto the two coupling wheel sets. The wheel sets are spring-mounted and electricity discharging via five plots on each side is ensuring secure current supply on well-kept tracks. Forward bogie and trailing bogie are equipped with pressure springs in order to avoid derailing while passing complicated sets of points and height differences. A central position feedback does not exist.
According to the manufacturers' instructions the loco is able to operate on a minimum radius of 800 mm, where the piston rod protection tubes must not be mounted. No instructions concerning the supports for the inductive train safety devices are documented, which are located even closer to the tracks.
In gauge 1 the market leader is usually equipping their locos with digital decoders innately, which also applies to most of the small series models. The company Kiss is delivering the gauge 0 BR78 designated for analogue continuous current operation. In this case the model is equipped with a standardised 21-pin port and room for the additional electronics is arranged for, which simplifies the assembly of a decoder.

Subtitle:
Detailing on boiler and cab

Noticing all detailing requires adequate lighting conditions. The valves on the sand box for example are scaled-down originals and virtually no detail is missing. The cables on the boiler are neatly aligned and freely mounted. Electric lines and lubrication tubes are equipped with delicate clamp fastener replicas. Feed-water pump, air pump and lighting dynamo are real treasures. The rows of rivets on cab and water tanks are authentic due to their flat execution.
Steam and feed dome as well as the square sand box on the boiler crown are in accordance with the form of the original and they are contributing to the distinctive impression of the Prussian tender loco. If one is resenting the height of domes and sand box should note that different versions had been built.
The cab has no opening doors but it is neatly edged and absolutely square. The execution of roof and ventilation cap is convincing. The rows of rivets here are also perfectly executed. The cab is almost completely furnished but the fittings are not highlighted in terms of colour. Workforce is not included in delivery.
Treads, ladders and tread profiles are equipped with chequer plate and are matching the original in size. The chequer is a bit flat, which does not correspond to the scale, but this is hardly visible.
The tender is filled with fine-grained coal, which is giving a harmonious impression, though. The DB also did use different sizes of coal and therefore this is justifiable.

Subtitle:
Undercarriage, frame, wheel sets, linkage

The metal frame of the original only allows little insight into the undercarriage. The frame flanges are plane, but because of the brakes and spoked wheels the frame can hardly be seen.
The replicated details on the black finished coupling, driving, control and connecting rods are convincing and will fascinate critical railway modellers, too. Coupling, driving and control rods are located close to one another and are almost corresponding to original dimensions.

The spoked wheels are delicately wrought and they possess strengthening webs in the crankpin area. The impression is brilliant. The brake system was simplified to some extent and the brakes are not equipped with return springs. The brake shoes are executed quite evenly and the sand pipes on the boiler do not exist in the undercarriage area. These restrictions are likely to be a confession to the operational ruggedness. Except for the sand pipes this does not attracting attention.
Instead of that the buffer beams, which are essential for this tender loco, are replicated completely and true to scale. Gazing at the four brake hoses, the steam heating and the fittings and inner tubes of the push-pull control on our test loco really are a feast for the eye. Of course the original screw coupling is mounted. In addition, the lubrication tube is leading into the coupling sleeve.
The replicated air reservoirs on pushing and trailing bogie are clearly visible and together with the sweepers (equipped with the typical holes!) they are giving a harmonious impression without appearing long-legged.

Subtitle:
Painting and lettering

The painting of the locomotive is perfect, the paint is covering well and very thin so that even the smallest details are still visible and the outlines of the brass model are preserved. The colour separating edges between black and red are faultless, the finish is perfect. The degree of gloss is in accordance with a brand new loco and the red undercarriage is meeting the original. The fittings inside the cab are not contrasting in terms of colour.
The lettering is complete and as far as it is visible it is true to size and mounted precisely. Loco number, Rw signs and the DB sign are perfectly etched and painted selectively.

Subtitle:
Lighting

On the front side the loco is equipped with three DB lamps (Hella) and 1,5V-µ bulbs. The bulbs are extremely delicate and the freestanding upper lamps are mounted prototypically. The bulbs are operated with a slightly reduced voltage in order to increase their durability. During digital operation the lighting shouldn't be switched-on when unneeded. The lighting changes, also during analogue operation in direction of travel and the complete light intensity is already reached between shunting speed and medium speed, which is meeting the original.

Subtitle:
Driving characteristics

On our test route the test loco didn't show any failures. The mounting suspensions of forward bogie and trailing bogie with different rail guiding and pressure springs are mastered in a remarkable way. The springing of the coupling wheel sets is well balanced and adjusted to the weight of the loco. On well-kept tracks no current interruption should occur due to the 5 already mentioned wheel sets, which are used for power consumption.
With medium speed the gearing mechanism is running smoothly and only minor sounds are audible. In the lowest speed range at continuous current mode the loco is barely running smoothly, at higher speed the synchronisation is without a spot. Apparently the loco is delivered in a non-greased state; therefore it is advisable to lubricate all moveable components with the help of acid-free oil. The gearing mechanism is not freewheeling. The loco should not be pushed in order to avoid any gearing damages.

The model is coping with planar tracks and a tensile load of approximately 290g from a standing position. This is in accordance with the driving characteristics of the original.

Subtitle:
Conclusion

The BR78 in gauge 0 by Kiss was eagerly awaited. The loco is offering an excellent detailing and in the undercarriage area some simplifications have been made, which are serving for operating reliability and robustness and do not interfere with the overall impression. All main dimensions are, as far as they could be picked off, accurately on a scale 1:43,5.

The driving characteristics are impressing; at digital operation it would probably be possible to achieve considerably better slow approach characteristics by using load-controlled decoders. Maybe the small series manufacturers should be persuaded by the market leader Lenz to equip the locos with digital decoders serially and possibly even with sound. This is feasible for gauge 0, referring to the size of the models, without any difficulty.

Personal matters
For quite a few years I only was in touch with gauge 0 matters and testing a gauge 0 model is quite unaccustomed but challenging to me. The differences are the small size and the correlated low material thickness and the high sensitivity. Gauge 0 railway modellers and the company Kiss may forbear my first test report on this scale in case I missed something or analyzed some characteristics too critically.

Picture headers:

No.	Text
1	Quick as a flash: the series 78 model by Kiss
2	View from the front and from behind: the 78 in gauge 0 is convincing
3	The view onto the driver's side is reflecting the harmonious overall impression of this model …
4	…the same applies to the heater's side
5	The lettering is neatly executed; also clearlyvisible: the inductive train safety device
6	The typical pump drive system of the 78 is excellently implemented …
7	…and the details on the pumps are also convincing
8	The BR78 is promising driving amusement – all in all a real enrichment for the gauge 0 sector

Box:
Dimensions of the model compared to prototype dimensions taken from the construction drawings

All dimensions in mm	**Original BR78**	**Theoretical 1:43,5**	**Kiss BR78**
Total length over buffers	14.800	340,2	341,8
Height above chimney	4.580	105,3	104,9
Buffer height	1.025	23,6	22,3
Inducer diameter	1.000	23,0	23,0
Driving wheel/coupling wheel diameter	1.650	37,9	37,4
Tailing wheel diameter	1.000	23,0	23,0
Distance between buffer and inducer wheel set	1.550	35,6	36,4
Distance between wheel sets and forward bogie	2.200	50,6	50,5
Distance between inducer and first coupling wheel set	1.600	36,8	36,2
Distance between driving and coupling wheel sets	2.050	47,1	47,3
Distance between last coupling wheel set and trailing axle	1.600	36,8	36,6
Distance between wheel sets and tailing bogie	2.200	50,6	50,5
Distance between buffer and trailing wheel set	1.550	35,6	36,3

Overview

Available versions	78 381, DRG, Epoch II 78 275, DB, Epoch IIIa 78444, DB sign, Epoch IIIb with push-pull equipment and inductive train safety device 78 468-6, DB sign, Epoch IV with push-pull equipment and inductive train safety device
Loco number of the test loco / Epoch	78 444, Epoch IIIb, with push-pull equipment
Engine / transmission	Glockenanker engine (Faulhaber), belt drive
Electricity discharging / traction tyres	Drive is actuating all 3 coupling axles, no traction tyres
Axles	All axles spring-mounted
Decoder / Sound	Not equipped as standard, 21-pin port according to NEM existing
Weight	Loco: 3.000 g
Price (recommendation from Kiss)	1.990 €

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Gauge 1

Category:
Modelling

Bar:
A turntable fire-brigade ladder in gauge 1

Header:
Modification of a special kind!

Intro:
Rüdiger Otahal describes the construction of a Magirus turntable ladder DL 23h in a scale of 1:32

Author and Pictures: Rüdiger Otahal

Fire-fighting operations on model railway layouts are especially appealing – at least as long as no real fire-brigade activity has to take place, where the complete layout would drown in the firewater. In order to achieving a realistic depiction a fire watch and also the corresponding road vehicles are required. Up to now gauge 1 vehicles like this are scarcely available at the market of accessories. The company Hübner is offering a fire brigade Tempo tricycle, from Besig comes an emergency „beetle“ and the company Mominiatur provides an Opel Blitz serving as a fire truck. But a turntable ladder is nowhere to be found.
Accordingly, a do-it-yourself-construction is the only choice. After extensive studies of prototypical pictures and drawings, searching the Internet and several visits to a museum I was ready for this challenge.

Subtitle:
The Magirus trailer truck provides the basis

The turntable vehicle is based on the Magirus truck tractor out of the Hübner range (now Märklin). First of all, the accurate axial distance of the model vehicle had to be compared and adapted to the dimensions of the original. The data sheets out of my own collection were really helpful in this case. In the first instance the frame of the basic model had to be stretched. Thereby the chassis was separated directly behind the driver’s cab and interim pieces, made from accurately cut polystyrene strips were inserted. Further operations should only be mentioned here. During these workings it was helpful to taking a look at the pictures of the original consistently.
At the front bumper it was essential to attach the connecting piece with cover, which serves as a water suction pipe. I was able to find a corresponding water nozzle with dummy cover at the ship modelling supply.

The painting of the driver’s cab turned out to be unexpectedly difficult. The very delicately detailed and authentic-looking pad printing of the original got lost during the paintwork with red colour. Of course no pad-printing machine was at hand. That’s why the primary inscriptions had to be painted in a troublesome way using a paintbrush. And even the decals, such as the “Magirus” lettering were especially recreated.

Now the following step was the manufacturing of the searchlight at the driver's cab. On the basis of an especially crafted prototype this component was cast from brass at a foundry.
In order to create blue light covers again corresponding components out of the ship modelling supply were used. The blue light sockets were manufactured with the help of a turning lathe.

Yet another challenge was how to establish the turntable ladder in fact. A prototypical ladder park would have been a five-piece ladder. Although it is possible to etch such a ladder from German silver this would have advanced the costs of the complete model significantly. And a plastic ladder park was completely out of question due to its breakage tendency.
Finally, I reverted to a metal ladder park, which was to be found at one of the numerous toy markets. Unfortunately the manufacturer is unknown.
All fittings, the hydraulic cylinders, the side parts of the ladder park and the vehicle body were crafted from cut-to-size polystyrene strips. The chequer plate, imitating the lateral covers and treads was delivered from Peter Fiedler (www.modellbauhandel-fiedler.de). All tread plates were milled out of the brass strips and glued onto the vehicle body, in accordance with their shape and position.

Subtitle:
The „sore spot": handgrips

Unfortunately the handgrips of the Magirus are no longer available at the company Märklin. Alternatively they were manufactured by creating cardboard copies of the originals on a scale of 1:32. Not an easy undertaking but the effect is excellent! The new grips were simply glued onto the doors.

All other details, such as the tube winch, the individual outriggers and the reception fixture of the tube winch, which also can be cut to length, were manufactured from brass profiles, brass wheels and thread rods and soldered afterwards.
Even the angle measuring device, necessary for indicating the ladder position was not forgotten. In the end also the spare wheel was attached and prototypically positioned at the ladder body. Similarly the operating device of the ladder park with its miniature levers, the searchlight and the hand wheels, necessary for emergency operations in case of ladder park overloads, were displayed.

The hometown of this fire-brigade turntable ladder DL 23h is Karlsruhe. On the computer the city arms and address were replicated using a drawing program, afterwards the lettering was printed onto decal foil and attached to the doors of the vehicle.

Then, finally the completely finished vehicle was placed on the layout – together with the Opel Blitz and the fire brigade Tempo tricycle it is a real enrichment. And the builder is as pleased as a Punch in view of the perfectly executed model. Finally, a wish was put into practice, even without a long model building experience.
And now the desire for an authentic fire truck is in my mind. The first fire watch is already built. Decorating elements like branchpipes, fire hydrants, hoses and helmets, boots and clothing are completing the scenery.

Anyone who wants to watch the fire brigade in action should not miss the exhibitions where the author is participating! Further information on the Internet at: www.masro.de.

To the original:
Manufacturer: Klöckner-Humboldt-Deutz AG
Year of construction: 1959 **Type:** F Merkur 125
Engine: 6 Zylinder Deutz-Diesel-V-engine, air-cooled, F 6 L 614
Enfine power:125 PS (92 KW) **Cylinder capacity:** 7983 cm³;
Gross vehicle weight: 10.000 kg

Primarily turntable ladders are used for human rescue. Beyond that they are used for operating the branchpipes during fire fighting and for accomplishing technological assistance at high altitudes. A hook is attached to the lower part of the ladder, this hook allows for lifting of loads up to 1.000 kg. The extension length of the ladder is 30 metres. Even at a distance of 12 metres from a building the ladder will still reach a height of 23 metres. This is enough to reach the top floor of a tall building. The ladder can be operated only from the bottom area. The crew of the turntable ladder vehicle consists of the operator and his machinist.

Picture headers:

No.	Text
1	The original Magirus turntable ladder vehicle DL 23h; the picture shows the model equipped with double driver cabin
2	Absolutely necessary for implementation purposes: detailed pictures of the original
3	The chassis of the basic Magirus vehicle was lengthened
4	The construction, housing the control of the turntable ladder, still in an unpainted state
5	Eddie, head of the fire brigade, is personally taking over the acceptance test of the ladder; at the rear: the removable tube winch
6	Even the treads and hand wheels seem to be fine
7	Eddie and fireman Erwin are proudly posing at the new turntable ladder; clearly visible at the front: the searchlight and the signal equipment
8	While fire chief Eddie and the firemen are discussing the upcoming operation Bruno doesn’t vacillate but snagging the fire truck instantly
9	On its way to a scene of fire: the Magirus turntable ladder accompanied by the Opel Blitz fire truck

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Gauge 1

Category:
Modelling

Bar:
The Dingler Water Crane in Gauge 1

Header:
A delicate water filling station

Intro:
Jan Nickmans (association PAJ modelbouw) has dealt with the brass construction set of the Dingler water crane on a scale of 1:32 – his reward for this work: a real gem for the Rw

Authors: Jan Nickmans, Wolfgang Häußler
Pictures: Jan Nickmans

For some time the company Firma Dingler (www.dingler.de) is providing a delicate water crane on a scale of 1:32. The brass model can be obtained in an already finished and painted version or as a more cost efficient construction set. Equipped with some skills and the necessary soldering tools this model can be assembled quite easily.

First of all the burs have to be removed from all components (by using a file or a miniature drilling machine with circular saw). In order to achieve a faultless soldering joint oxidised areas have to be cleansed until the raw brass material appears. The easiest way is to use a track cleaning rubber, such as the company Roco is offering for H0 trains.

Subtitle:
Mounting the base plate

In the first step the drain grate has to be soldered into the base plate. For that purpose the grate has to be inserted in the base plate opening and the joints have to be lubricated with soldering oil. Then the blowpipe is used until the oil starts to flow. Now the soldering tin has to be employed. At an ideal temperature the tin is flowing into the gaps between drain grate and base plate by itself and it will disperse evenly.
In the next step the water column supporting plate and the base plate have to be soldered together. This is done just as it has been described before. Connecting the plates has to start in the corners due to the increased area and moderate heat has to be applied, otherwise the plates may arch upward. The soldering should be done slowly and bit-by-bit – and the connection will work without difficulty.

Subtitle:
Assembly of the basic pillar

The opening of the foundation where the water column support is located has to be cleansed with the help of a grinding sponge. The pillar has to fit accurately into the opening and an absolute upright position has to be ensured. In order to soldering foundation and pillar the

pillar has to be clamped in the bench vice. After soldering and for cooling purposes the hot (!) work-piece has to be dipped into a pot containing cold water by using a gripper.
Afterwards the pillar has to be soldered to the base plate. Please make sure that the basic pillar is in an upright position.

Subtitle:
Soldering the water pipes

In the next step the hinges have to be soldered to the water pipes. First, all components have to be reworked until they fit accurately using a file. Now the pillar connection has to be clamped into the vice and the vertical water pipe has to be soldered on. Afterwards the cover plate has to be soldered. In doing so it is necessary to cooling the first solder joint using a wet cloth to ensure that the soldering will last! The connection between pillar and hinge now simply has to be clipped on, since the water crane has to remain movable.
Subsequently, the second water pipe and the appropriate hinge have to be soldered likewise.

Subtitle:
Assembly of the water crane

The previously soldered components now have to be stuck together. Details such as lantern and linkage have to be attached. Alternatively, this can be done using superglue instead of soldering. The hand wheel has to be soldered onto the base plate. In doing so the water column foundation has to be cooled to ensure adhesiveness of the components.

Finally the entire water crane has to be degreased using cleaning solvent and all components have to be airbrushed with mat black paint. The hinges on the water pipes may have to be greased again in order to ensure smooth-running rotatability and free room of motion in every required position. With some white paint and an almost dry paintbrush limescale traces displaying running water have to be applied. In the same way weathering traces can be applied with the help of auburn colour or pigment powder.
In the end the small bulbs have to be attached and the lanterns have to be revetted with the typical white or red “window panes”.
Now the water crane is ready for taking its place at its destination point on the layout – a real gem, not only for the Rw!

Box:
Required tools:
Miniature drilling machine with circular saw
Burner, soldering oil and tin
File and sand paper
Bench vice
Airbrush

Water crane or kit source of supply:
Der Lokladen
Stefan-George-Straße 13
D-55411 Bingen
www.der-lokladen.de

Picture headers

No.	Text
1	The components of the Dingler water crane
2	Necessary for assembly: a soldering burner, soldering oil, good quality and easily flowing tin
3	Oxidised components have to be cleansed by using track cleaning rubber
4	The drain grate is inserted into the base plate
5	Grate and base plate are soldered
6	Base plate and support of water column and hand wheel
7	The foundation opening supporting the basic pillar has to be cleaned by using a grinding sponge
8	Basic pillar and foundation are soldered using the bench vice
9	The pillar has to be connected to the base plate in an absolutely upright position
10	The hinge of the pillar has to be soldered to the vertical water pipe, again with the help of a vice
11	Flame soldering of the water pipe
12	The completely assembled water crane, equipped with all details
13	The delicate water crane after painting, assembled with illumination

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Category:
Layouts

Bar:
Segmental layout in gauge 1

Header:
A forced remodelling in „Rothenbühl“ or: converting a through station into a terminus

Intro:
The trains on the here presented gauge 1 layout are operating on a narrow terrain and barely all around – the following article is disclosing the secret, which is featuring this layout

Author: Wolfgang Häußler
Pictures: Manfred Weihrauch

Just recently, when getting up in the morning it happened again. It obviously is the humid and grey on grey time of the year, which is the predestined season for lumbago. Without any warning a pitiless, stabbing pain is spreading throughout our back. There is no escape – we are in agony. Blessed is the one who is able to struggle to his feet in spite of the pain and put on a pair of trousers. If only we had been heeding for the physiotherapist’s advice of regularly doing some back gym instead of producing model-building creations at the time. Is it too late now? By no means! But anyone who is building a layout will be well advised to take into account any possible cumbrousness, which may occur with the passing of the years. Or do you like climbing the kitchen table in order to assist you wife while decorating? Certainly not, for the table has the distinct advantage of being accessible all around.

Our model railway layouts are completely different. In the majority of cases and for lack of space they are planned along the walls – unless an exhibition layout is concerned, the construction of track layouts and landscapes usually is only feasible from the front edge of the layout. Our own experience has taught us that a layout depth of 120 cm and an installation in the same lofty height is maxing out ones body flexibility. The backcloth attachment as well as the layout assembly itself turns out to be rather difficult, which occasionally can put one off enjoying this hobby. Quite irrespective of the fact, that all necessary interventions in train operation and coupling of wagons via original couplings with outstretched arms are posing a challenge to ones acrobatic ability every time. Since not every one of us is a „Nurejew“* we better do not take this too seriously and try to realize an effective train operation by dealing with a minor layout depth.

*N.B.: Rudolf Nurejew (1938-1993), Russian-Austrian dancer and choreographer, was ranking among the most virtuosic and charismatic dancers of his time

Subtitle:
Bending vorward: the minor layout depth

In order to design his model railway layout Alfred Abel took just this idea to heart. A depth of merely 50 or 60 centimetres is necessary to allow for an appealing gauge 1 train operation on an area of 22 square metres. Consistently the focus was on a segmental construction in

order to ensure any possibly occurring later dismantling because of relocation reasons without major eliminations.
The length of the track modules is varying from 90 to 110 centimetres. The station area is consisting of three segments, each in a dimension of 120 x 60 cm and each with two modules of 120 or 75 cm and a depth of 50 cm. The corner modules leading to the backcloth of the layout received corresponding filler elements. Thereby an accessibility of the layout surface is guaranteed at any time without performing contorted manoeuvres. This advantage shouldn't be underestimated while planning and assembly of the layout.
A model-building companion sketched the module heads for a standardized connection of the segments. In order to ensure a safe train operation an absolute fitting accuracy is required in the course of the manufacturing of the module heads. If you don't feel capable of this self-construction you may rather revert to a commercial offer or order the module heads according to your own sketch. An appropriate service is amongst others offered by the club "IG Spur1 Module Rhein-Neckar" (Info at: www.ig1.de).

Back to the layout: Starting at the „Rothenbühl" terminus the route is leading to the left along the landscape modules and after a short tunnel passage it finally ends at a holding sidings. As an interim solution it was fit into a rack, but it ought to be expanded at a later date. By now these additional storage places are already providing for a diversified operation. During the following expansion works the storage sidings ought to be relocated underneath the layout.

Subtitle:
Special feature: the dismantling by reason of tunnel collapse

The layout was planned as a single-track route, located at low mountain range. The topic of the layout is Epoch III and shows the branch line idyll of the 60s. One special feature of the modular layout is located in the right area, conterminous to the dead-end station. Here originally a through station was located, assumingly. After a tunnel collapse, caused by flooding at the end of the 40s the whole station complex had to be designed anew. It was necessary to make way for an engine shed and a small RW for series 89 locos, which were based here and also for the maintenance of the locomotives, which were frequently operating at Rothenbühl station. All corresponding track and treatment systems are located in the rear area of the primarily left station exit.
The single stand post and beam construction of the engine shed was completely self-constructed; the same applies to all buildings on the layout except for the small state railway coop. At that time coal feeding was made via wicker baskets, which were filled inside the coal storing room and manhandled to a coal feeding bridge with the help of a small elevator. This also was self-manufactured from small wooden strips. For lack of space a new water tower could not be built at Rothenbühl station. Instead of that an old defence tower was modified and used for water supply.

When the T3, which is stationed at Rothenbühl is leaving the station every morning it has to pass the building material supplier at first, which is located at the station entrance. After passing through a level crossing the loco finally arrives at the double tracked station. The reception building is located in a turn. The two-storey building with its lavatory extension is reminiscent of the typical station buildings of the 60s.
Just behind the station building the local machine factory with its siding track is situated. For lack of space the building was built by using a semi-relief construction. In defiance of the minor width of all layout segments a remarkable depth effect is resulting from the clever mounting of the backcloth (by the company JoWi; Info: www.modellbahn-hintergrund.de), which is to be discovered all over the complete layout.

In the further course of the track on the right side a parking module with goods shed and loading platform is installed. A Fuchs excavator is currently doing its daily task by loading a stake car with a cartload of logs. In the rear part of the layout the route is leading to a dead-end track and finally ends in front of the said tunnel collapse. The generously sized signal and switch tower is also located along this track – it is a relict of the time before the supposed railway siding removal was made. The original location and task of Rothenbühl station as a through-station is illustrated by the comparatively elaborate execution of the signalling, which meanwhile was reduced to a minimum.

Subtitle:
Pleasing: the diversified landscape

After leaving the station the trains are crossing a small course of a stream at first. Subsequently an underground crossing, interrupting the railway embankment, is following, which is pleasing to the eye of the beholder. The further course of the track is defined by a second stream crossing and finally it disappears from ones sight behind a restaurant building. After a short drive the trains are reaching a tunnel, which is ending up in a holding sidings. While the "movements inspector" is assembling the next train for the trip to Rothenbühl some migrant Hübner and Preiserlein figures are curling up at the beer garden of the country inn. The diversified and hilly landscape virtually is inviting to spending a hiking and lingering day here. Besides natural materials also flocks and grass fibres out of the market of accessories were used (Heki, Busch, Mininatur and others). Trees and bushes were self-constructed.

The track material, which was used for building this layout, comes from the companies HEGOB and Hübner. All signals are originating from Besig and Saalbach. The station lamps were also purchased at the company Saalbach.
The train operation at Rothenbühl is digitally controlled by DCC-/MR equipment. In addition to the already mentioned, sophisticated T3 a Hübner „64" tender loco and a Köf2, a V36 and a Märklin V100 are also coming into operation on this layout. The commuter traffic is operated by a Hübner VT/VS 98. Blunderbusses, converted coaches and fast train wagons are serving as passenger cars, all goods wagons are originating from the companies Hübner, Kiss and Märklin.
Due to the small, local machine factory tolearbly acceptable freight transportation is possible. Passenger transport to the district town and the excursion traffic on weekends are both contributing to a profitable and relatively well-frequented route. Although with the use of a railcar some economy measures are already emerging.

The successful continuity of Rothenbühl seems to be ensured. In fact, it is planned to open up the closed tunnel again. The railway sidings at the station and the station platforms shall be enlarged in order to create a stop over, even for longer trains.
A turning platform for the storing area is already planned in order to ensure an operation of trailing tender locos, such as the BR23 on this layout - thus: there is a lot happening in Rothenbühl!

Picture headers:

No.	Text
1	Gathering together at the beer garden: who wouldn't enjoy lingering at this spot?
2	The BR89 and its load of goods is crossing the course of a stream at the country inn
3	"Slow approach" for a T3, entering Rothenbühl station
4	A VT/VS 98 unit at the second course of a stream near the station entrance, very beautifully designed: the stream crossing
5	A visiting loco on its way: a V36 with its train of blunderbusses at the underground crossing
6	And again from a rear view; clearly visible: the road bridge, which fits perfectly into the landscape
7	Series 64 while replenishing the water supply at the small RW
8	View to the RW with its self-constructed engine shed and the coal-feeding facility
9	The railcar at the railway crossing, the small builders` merchant in the foreground
10	Heavy labour at the local goods facility: a Fuchs excavator is loading a stake car with logs
11	The Rothenbühl reception building with platforms that are running in an arc
12	The machine factory is causing additional hustle and bustle at his layout
13	The Köf2 is waiting for its shunting task
14	Neighbour Tom is pretty astonished; Alfred the gardener is presenting his gigantic pumpkins
15	Rothenbühl signal tower; the nocturnal illumination is revealing the interior decoration
16	Leisure-time small talk at the goods station – or is something more going on?
17	Rothenbühl during full moon: the inhabitants of the district town love to go out
18	View to Rothenbühl station, created in an arc – we are far from "Silent night"!
19	View onto the loading tracks at the local goods facility; on the right side the Köf and a G10 are waiting for the opening of the shunting track
20	General cargo loading at the goods shed
21	A tempo tricycle is waiting for payload at the ramp

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Category:
Modelling

Bar:
Platform Scales in Gauge 0

Header:
Well begun and perfectly executed!

Intro:
In former times almost every cargo line was equipped with platform scales - Günter Zirch did venture on creating a reproduction of a typical southern German scales in gauge 0

Author and pictures: Günter Zirch

Inspired by a visit at the farm museum Illerbeuren, where a typical Swabian scales is to be found, the desire for building a prototypical model at the cargo line of my modular layout, which still was under construction, did emerge.
Unfortunately, any further investigation in respect of the original was very difficult. In many places such relics have disappeared long ago and no literature is available. Even searching the Internet did only lead to a few useful results. Contacting a well-known manufacturer, where such scales had been produced during the first half of the last century also was in vain.

Since the above mentioned scales did not meet my own needs in terms of size and maximum weighing capacity the weighman's hut and the weighing surface were generously dimensioned in order to cope with larger trucks, like they were to be found during the second half of the last century. The weighing surface was created on the basis of the scales, which can be found at the exterior cargo line at the freight yard of Augsburg main station. All dimensions were accurately taken on the spot and transferred, like it is shown in figure 1.

Subtitle:
Implementation to the model

It is advisable to use plywood and lime wood as basic material for building the vehicle weighbridge, which is embedded in the cargo line area. Prior to implementation it is essential to pore over the location of the original. As visible on the picture of the original the scale plate often is positioned somewhat elevated to the surrounding cobblestone cargo line level. Over the years the crossing of heavyweight trucks will even lead to further sinking of the cobblestone pavement. That is why the height of the used cobblestone has to be considered before building the total height of the scales. If necessary, some thin wooden strips may be used to support the installation of the cargo line.
A circumferential lime wood bordering, serving as upper edge, is glued to the assumed base plate with a thickness of 3mm. Now the lime wood is painted with slightly thickened dispersion paint (white mixed with a little grey colour). After drying the wooden structure will be invisible. In fact, by using too much paint structures like burst concrete are appearing. Using this method saves the production steps of brushing thin fluid plaster onto the wood and painting. If you do not feel confident you better exercise with a wooden leftover before. It is perfectly fine if the paintbrush is slightly dipped into the drying paint again – this will lead to very beautiful effects. The inside of the scale plate should be painted using mat black colour

(Revell or Humbrol) to ensure that afterwards no light will shine through in this area. The metal bordering of the scales is made from polystyrene and painted with rust-coloured paint (e.g. Revell No. 83). The bordering is glued onto the concrete mounting by leaving a small gap. The planks are cut-to-length according to the drawing (figure 1) and weathered using a wire brush. At this you have to run your hand over the wooden strips and remove the softer parts. Afterwards ASOA wood stain for weathered wood is used. After drying the planks are affixed with all-purpose glue (e.g. UHU). Finally the planks are decorated with screw imitations made from 0,6 mm rivets, which previously have to be painted with Humbrol No. 53 around the head areas. It is recommended to weathering the planks with "green brown dirt" using powder paint (Kremerpigmente). The concrete edging may also receive some corresponding traces of weathering. At the end the model is covered with a protection layer of mat clear coat (e.g. Revell No. 2) for the pigment paints are not touch-resistant.

Subtitle:
The check weighman's „hut"

Similar to the original, the weighman's hut is almost entirely made from wood. The gauge 0 dimensions are shown in figure 3. The base plate is made from 3 mm plywood, like it is used for building the scales plate. The wall foundation is build onto the base plate from strips of the specific size. The concrete replication and the weathering are taking place in the familiar way. Profiled wooden plates (Northeastern; can be purchased at Addie Modellbau, see box below) are used for building the walls. Well suited are the "planks with strips" in a thickness of 1,6 mm. For gauge 0 a strip spacing of 4,7 mm is recommended. With the help of a crafting knife they can easily be cut into shape. If some practice is provided the openings can be cut out from the rear side without any problems and no traces will appear on the front side.

The window frames and windows are made from polystyrene strips and provided with translucent synthetics. This work can be avoided by purchasing some approximately suitable model windows at the accessory supply.

Subsequently, the inside walls are stained. If the roof should be mounted in a removable way or an opening door should be desired one should not do without replicating the framework beams. They are again made from Northeastern square-cut profiles, which are stained in a dark colour before mounting. Staining after assembly will not be possible for the wooden parts, where glue is adhering will not absorb any stain.

Before mounting the windows and assembling the door the painting of the outside walls has to be done.
In doing so various colours are on the cards. The colouring of the weighman's hut in Illerbeuren corresponds to Revell No. 88 more or less. After drying the walls can be glued together and, affixed with the help of two rubbers, put away overnight. Finally some discreet weathering is given to the wood using pigment colours and mat clear paint again.

The door was sophisticated via hinges from the company KS-Modellbau (www.ks-modelleisenbahnen.de). The bar of the lock was replicated from polystyrene profile. Before that all gaps between the planks on the inner surface of the door have to be carved and 3 mm reinforcement boards from 0,3 x 2,4 mm lime wood strips have to be attached.

The roof was also made from wooden profiles (1,8 x 1,8 mm). A small bulb socket in an oblong size out of the spare part box was used, which once was used as a component of a N-platform.

The actual roof was made from a plain tile board (Addie; www.addie-modell.de). I put a lot of effort in the colour design of the roof since the viewer always glances at the roof first and this first impression will always be remembered.
After cutting the two parts of the plate and the row of ridge tiles were airbrushed using REVELL No. 37. Since roofs normally only do possess a uniform and quite boring colouring while they are new I painted reams of individual plates in different shades using a fine paintbrush after drying. After further drying the already known Kremer pigments were used again and afterwards mat paint was applied. If now some of the plates are still appearing quite unnatural in terms of colour it is possible to airbrushing a breathe of "levelling fog" onto the roof using highly diluted Revell No. 8 mat paint.

The passage between weighing surface and weighman's hut is build by using polystyrene profiles. The chequer plate cover also is made from polystyrene. The hinges and the handle for opening the cover are rounding out this building element.

Since no detailed pictures or drawings of the actual scales interior were available and the detailed design is almost invisible due to the dim light inside the hut I replicated the interior very sparsely by using polystyrene profiles strips (especially U and H profiles). The interior fitting was installed directly behind the window, which is pointing to the weighing surface.

Meanwhile the scales is decorated with a small diorama. At a later date the platform scales will be installed at its proper destination, at the cargo line of the narrow gauge station „Krautmühl", where actually the tracks are about to being laid. Equipped with corresponding vehicles this scales surely will be an eye-catcher!

Picture headers:

No.	Text
1	Dimensions of the base plate with planks and bordering for implementation in a scale of 1:43,5
2	The platform scales at the original; clearly visible: the elevation compared to the cobblestone level
3	Dimensions of the base plate and the side walls of the weighman's hut in gauge 0
4	Just now a Mercedes truck has reached the weighing surface. Now Louis may take his hands out of his trouser pockets.
5	And whom does this locked up red Weinert bicycle belong to?
6	Currently the weighing procedure is finished. Ludwig may continue his trip.
7	The back of the weighman's hut; the Northeastern lime wood structure is appearing very delicately
8	Bird's eye view of platform scales and weighman's hut
9	Currently a Minichamps Mercedes-Benz L 911 is weighted
10	The production of this fence was described in an 012-Express article, issue No. 10 (June 2009); the fencing posts are made from 0,5 x 1,2 mm lime wood profiles and were affixed individually; the weed is originating from Heki and Silflor
11	The painting of the lime wood was sparingly applied by using an airbrush, this way the wood structure is still visible
12	Seems like anyone has forgotten to turn off the light or is the work force still busy here late at night?

Page in Original German Version: 42

Category:
Fundamentals

Bar:
Construction of a layout in gauge 0

Header:
The Lenz Master Practitioners

Intro:
An exhibition layout in gauge 0 is a real challenge even for old model building stagers – but absolutely feasible if a reasonable planning is given – our master practitioners do agree

Authors and pictures: Bruno Kaiser, HaJo Wolf

„This cannot be that difficult because it is twice as large“. Something like that was in our mind when we offered Bernd Lenz to build a gauge 0 layout for exhibition and exposition purposes. Since we are anything but unversed in building H0 layouts. Apart from the “twice as large” scale the requirements on the modules are differing a lot from those, which are required in building a static layout at home: the segments need to be not only handy and lightweight but also solid and precisely fitting. They have to be removable without difficulty or even palletisable to ensure that the booth builder is able to transport the whole layout.

The dimensions of the layout are already predetermined by the different stand sizes: a maximum depth of 100 cm, which can even be reduced to a size of 70 cm and a modular width of 100 cm in order to exhibiting a layout with a length of four, five or even 6 metres. Since this is a matter of an exhibition and demonstration layout, tracks as well as accessories have to be presented.

This is making high demands on the planning; the more so as any overcrowded collection of tracks ought to be avoided. Another challenge was that switches and crossings should not be placed on module boundaries for the benefit of operational safety and visual appearance.

Subtitle:
The track plan

The tracks are placed onto the modules, dimension 70 x 100 cm and the 30 cm wide extra pieces are “merely arranged” and can be omitted if not enough space is available. We set out to placing Krakow station on the left rectangular module and planned the total length of the slightly arched platform tracks for a blunderbuss train and a V 100 (train length nearly 120 cm). We placed the entry of the station and the corresponding curved turnout in the arch, which is located on the modules of the short L-shaped arm. Freight shed Gnoien was placed on the utmost right module. This way we were able to planning the access via a double-slip switch, and even a short cargo line and a holding track could be inserted. And there still was some room left for a small loco treatment area; this track will be switchable, too: for normal traction operations and as a programming track.

We also considered a potential expansion to the right: the medium track ends in a 90° angle at the edge of the layout, any connection to further segments will therefore be uncomplicated.

Subtitle:
Self-construction versus finished solution

A do-it-yourself-construction of the module boxes wouldn't have been a problem for well-proven woodworms like us. Worry lines appeared at the question of building accurately fitting and strong connections. We discussed timber connectors and carriage bolts and the question of how to manufacture absolutely precise boreholes.
Somewhere, at the back of our mind the name IMT Lenzen did emerge. Searching his website we instantly knew that we would find the accurately suitable solution here. Packed with plans and specification sheet we discussed our project with Mr Lenzen and three hours later we were absolutely sure that he is the one. Above all Mr Lenzen elucidates us on the fact that we were about to building segments, because modules would be equipped with a standardized transition.

We received all finished components two weeks later. A perfect work, every single component was marked, which made it almost impossible to assemble the pieces inaccurately.

During assembly it really became obvious that IMT had done a perfect job: within a few hours (coffee break and charging time of the cordless screwdriver included) we had assembled the four rectangular segments of the long arm, the reinforcements were glued in place and the cover plate supporting strips were attached.
The side panels, where other segments have to be attached are equipped with corresponding boreholes for the connecting screws. Aligning pins, which have to be mounted into two brass husks each are making sure that an accurate assembly is taking place. We really appreciated Mr Lenzens service feature of assembling the quite complicated corner module beforehand.

Well! Now we can get started with the track construction …

Picture headers:

No.	Text
1	The track plan of our gauge 0 exhibition layout, designed with Mac RailModeler
2	The prefabricated parts for the rectangular segment boxes, delivered by IMT
3	After bonding the components are affixed exactly oblong with the help of accurately cut logs of wood and screw clamps
4	The finished segment box with aligning pins

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Category:
Original & Model

Bar:
Series 85

Header:
44 + 62 = 85 (1'E'1 h3)?

Intro:
Steeply sloping sections had been the home of the powerful tender locos series 85. Our reflections on the original will describe what they have in common with the BR44 and the BR62

Author: Klaus-Gerd Schoeler
Pictures: Slg. Klaus-Gerd Schoeler (1), Slg. Thomas Obst (3)

After their formation the German State Railway executives reflected about a classification measurement, which ought to lead to the replacement of the many different types of State Railway loco variations. Another target was the standardisation of loco constructions in order to achieve a more economic manufacturing and low operating costs.

Already in the year 1923 the classification plan had scheduled a powerful five-coupled freight tender loco with inducer and tailing wheel set and an axle load of 20t, which was intended for main line use or enhanced branch line operations. The positive experiences of the Prussian State Railway and their series T20 (later BR95) on steeply sloping sections in the Thuringia area also turned the balance to commissioning this loco. Consequentially it was planned to integrate this loco with the destined series prescription 84 to the other, newly planned freight tender locos series 80.

In the course of the implementation of the new standard loco range again a lighter version with a 1'E'1 wheel arrangement was built. This loco received the series description 84. The heavyweight tender loco with its triplet engine received the description series 85. The undercarriage of the BR 85 is corresponding with the BR44 undercarriage, except for the additional trailing axle. The boiler is corresponding with the boiler of the BR62. Pusher axle and trailing axle and the adjoining coupling axles were combined to a Krauss-Helmholtz bogie. Along with the short and rigid wheelbase of 3400 mm this locomotive was optimally applicable for narrow radii and for branch lines.

Subtitle:
Ease of handling ascending slopes

It was planned to use series 85 mainly on the ascending slopes in South Germany and the DRG had designated the "Höllentalbahn" as field of application. Till then the critical ascending slopes along this route had been managed with the help of rack and pinion railways. This operation mode only allowed for slow speed and was very complex in terms of engineering and quite pricey in terms of operating costs.
As soon as the route was modified for an axle weight of 20Mp and the Ravenna viaduct was built, the route from Freiburg via Titisee to Neustatt and Villingen was suitable for the

heavyweight tender locos, which had an overall weight of 133,6 t in a completely restored condition with an empty weight of 99,7 t. The striking adhesive weight of 99,7 t and the help of a backpressure brake allowed for more tensile load, even at down grade routes.
The specification sheet allocated series 85 with an engine power of 1500 hp and ascending slopes of 50 ‰ to hauling a train with a total weight of 180 t at a speed of 23 km/h. The indices traction force was 28,5 t, which turned the BR85 into most powerful tender loco, which had ever been built in the name of the DB and the DRG.
In the year 1932 the construction of ten locomotives started and the first loco with the serial number 001 was forwarded to the test department Grunewald on 17th December 1932. Loco number 85 002, which also was completed in December 1932 was directly put into service at the Rw Villingen /Black Forest.
At the beginning of 1933 the eight remaining locomotives were completed and all of them were registered in the Southern Black Forest area at the Rw Villingen. Neustadt (Black Forest) was their home station, which was located in the middle of their area of operations. At this spot, also the personnel training took place. The application of these powerful locos simplified and expedites the service and it was possible to increase the tensile load, too.
The locos were operating on the DRG ascending slope routes in the Black Forest area until they were taken over by the DB. Only the 85 004 was sorted out after it had been completely destroyed by an air attack while hauling a munitions train.
The service of the BR85 007 along the Höllental route became dispensable and in the year 1960 the loco was brought to the Rw Wuppertal-Vohwinkel, where it was used for operating the ascending slope route between Erkrath and Hochdahl in front of double-heading trains and for trailing services until the year 1961. All other locomotives out of this series remained in the Black Forest respectively Baden-Württemberg area. Due to the amplified electrification in South Germany the powerful tender locos were no longer needed, the more so as the BR39 and the BR44 were able to taking over the service in some 85 areas. The BR85 007, the original sample of our test loco, which was the last existing out of this series, was sorted out on 4th December 1961. At its last field of operation the loco was used as a heating engine for a short period of time. Today the loco belongs to the city of Freiburg and is stored at the former Rw.

Box:

Further information on the original:

- Eisenbahn Kurier: Die Höllentalbahn
- Pocketbook: Deutsche Dampflokomotiven, Horst. J. Obermayer, Frank'sche Verlagsbuchhandlung, Stuttgart 1977

Facts on the original BR85

Piece number:	10
Manufacturer:	Henschel
Years of construction:	1932 - 1933
Withdrawal from service:	1961
Type:	1'E'1 h3
Total length over buffers:	16.300 mm
Maximum speed:	80 km/h
Indicated power:	1.103 kW
Driving wheel diameter:	1.400 mm
Front bogie wheel diameter:	850 mm
Rear bogie wheel diameter:	850 mm
Number of cylinders:	3
Cylinder diameter:	600 mm
Piston stroke:	660 mm
Boiler overpressure:	14 bar
Grate area:	3,55 m²
Superheat surface:	72,50 m²
Evaporative surface:	195,95 m²

Picture headers

No.	Text
1	Blessed is he, who has a grandpa who is a professional locomotive driver: the picture was taken in Geislingen/Steige
2	Absolutely powerful: the 85 001 was the first series loco of this type
3	The heater's side of the "power pack" 85 007. A mighty loco: compared to the "mountain climber" BR94 the BR85 is longer by more than 3.5 metres

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Category:
Original & Model

Bar:
Testing the KM1 BR85

Header:
An inspiring spectacle!

Intro:
Suitable not only for „Höllental“ train operators: the new BR85 model by KM1 – we tested this loco for you. Our conclusion: absolutely marvellous!

Author: Klaus-Gerd Schoeler
Pictures: Manfred Weihrauch

The kind and generous Mr Krug provided us with even two locos, one of them was already equipped with a claw coupling mounted on the rear side.
The models were delivered safely wrapped in a loco carton. The loco was screwed onto a moulded aluminium sheet and additionally secured by a formed polystyrene cover and hook-and-loop tapes. Supplementary devices such as piston rod protection pipes and toolbox replicas with greater depths as well as a detailed instruction manual are enclosed. It is advisable to follow the details with regard to smaller radii.

After unpacking the first impression really was overwhelming! Already the sight of the boiler with its sand boxes, steam domes and the various wires and fittings was a real pleasure. The undercarriage is fascinating. It is almost as if the real Höllental Loco is truly standing in front of us!

Subtitle:
Technology

The locomotive is mostly made of brass and the frame is made from zinc die-casting material. This method of construction is leading to an operating weight of approximately 6,5 kg. The reliable power supply is carried out via four wheel-sets. Gearbox, axles and the wheel-sets are all equipped with ball bearings and maintenance-free. Connecting rod bearings as well as coupling rod bearings have to be greased before starting up. The power is provided by a 22W-Maxon-Glockenanker engine, which effects the fourth set of coupling wheels set via cardan shaft and two worm wheels with a gear transmission ratio of 21:1. The other driving wheel sets and coupling wheel sets are actuated via coupling rods.
The locos are designed for operating on radii from 1,020 mm upwards, but in this case the lower toolboxes and the piston rod protection pipes must not be mounted. In the manual it is indicated that priority should be given to larger radii in order to prevent the locos from damage.

Subtitle:
Detailing of boiler and cab

In this regard it was necessary to have both versions at hand in order to judge both variations, which are differing a lot in the front section. In general we would like to announce with satisfaction that the detailing on both locos is hard to top. All wires, flanges and fittings on both versions are completely reproduced, correctly positioned and true to scale. The longer one is occupying oneself in the models the more details can de detected and the performance is very pleasing. The cover caps of the coalbunker and the water tanks can be opened (equipped with inserted sieve sheet!).
The sandboxes with long rows of rivets are in accordance with the original and contribute to the beamy impression of this loco. The cab is equipped with an opening door; the rounded roof with ventilation straps is convincing. The rows of rivets again are carried out optimally. The cab is completely furnished and the fittings are backed in white colour. The workforce can be ordered at KM1 by redeeming a voucher. Treads, ladders and tread profiles are furnished with chequer plate according to the original.

The Epoch IIIa loco without smoke deflectors has a striking appearance. Real eye-catchers are the pumps, which are mounted at the front area of the boiler. Every single detail on the pumps is replicated, the cooling fins, the flanges and also the exhaust silencers. The steam inflow pipes and the cylinder drains are executed in a magnificent way. All details on the inner cylinder are replicated meticulously. The front view through the highly detailed smoke box door shows the imposing inner cylinder with drainpipes and cogsets. The sash fasteners are flexible and equipped with pressure springs.

Subtitle:
Undercarriage, frame, wheel sets and linkage

The frame of this model is made as a zinc die casting construction. This is leading to a constant dimensional accuracy throughout the complete series and is therefore forming the basis for a harmonious operation. This technique enables to present all cross webs, screw connections and bolts prototypically, which in particular contributes to the appearance of sectional frame locos. The model frame is thinner than the original one in order to cope with the small model railway radii, where a large lateral relocatability of the wheel sets is required at a radius of 1,020 mm.
The wheel sets are very pleasing and the webs in the spoke sockets are replicated in accordance with the original; even the elliptical profile of the spokes is present. The prototypical drillings of the counterbalances are also accurately replicated, which is adding a special zest to the coupling and driving wheel sets.
Even the detailing of the black-finished coupling rods, connecting rods, control rods and piston rods is leaving nothing to be desired. The inner cylinder also possesses a slideway, connecting rods and a control rod. The connecting rod is affecting the second cranked axle. The crosshead of the inner cylinder, which is bidirectional swaying on the sliding rod and the connecting rod is clearly visible.
For a better cornering ability the brake shoes are carried out in a thin but moulded manner and the return springs are correctly replicated. The sand pipes are leading almost down to the tracks, which is rounding off the favourable impression.
In the undercarriage area the (lubrication) tubes do exist, as far as they are visible. It is necessary to refer to one specific feature. Depending on the engine not only the actuation of the Bosch central lubrication pump on the heaters side but also the actuation of the belatedly mounted wheel flange lubrication is replicated. This is giving evidence of the scrutinizing

researches on the original done by the “Lauingen” company, instead of only offering different types of lettering!

Subtitle:
Painting and lettering

The painting of the loco is outstandingly executed, the finish is applied evenly and overall and all details are contrasting in a sharp-edged manner. The black and red separation is faultlessly executed – the finish is perfect. The degree of gloss of this brand new loco is authentic. The red colour of the undercarriage is prototypical.
The lettering is complete, accurate and precise in terms of size and image sharpness, except for the type plate on the early Epoch III (Gt55.20 instead of Gt57.20). The train number and Rw signs as well as the DB nameplates are neatly etched and selectively painted.

Subtitle:
Lighting

The DB type loco is equipped with two DRG lamps at the bottom of the front area and with one DB Hella lamp at the top, all of them provided with warm-white LEDs. The effect is very realistic and close to the original. In contrast to former locos from Lauingen the suspension of the upper headlight on this loco is considerably daintier. The cab illumination is very subtle, the fittings and interior furnishing are clearly visible, which is very convincing in a dimmed room.
The flickering of the firebox also is replicated in a very authentic way and doesn’t outshine the complete cab. Via tiny holes in the fire flap only the close surrounding is visible.
Anyone who is missing the engine lighting should complain to the DRG or the DB, since they never ever equipped their locos with any engine lighting.

Subtitle:
Driving characteristics

After greasing the loco was tested on two different layouts in accordance with the user manual. On the one hand this should be done in order to study the handling performance on uphill grades and research the minimum radii. On the other hand the locos are to being tested in front of a long train at high speed on larger radii and spacious routes.
On both layouts the locos did not show any failures. The pusher and trailing axle suspensions with pressure springs and return springs as well as the springing of the coupling wheel sets is well-balanced and designed to suit the loco weight. This loco may be able to even coping with worse installed tracks. Since four wheel-sets are serving for the power input no power failure was to be noticed at shunting speed on Märklin switches.
The gearing is running extremely smooth, the loco can be pushed and via the freewheeling the coupling wheel sets are smooth running and rotating simultaneously. We were also interested to hear if there is any engine or gear noise when the sound is turned off. There were no grumbling sounds at low speed and no whistling noise at higher speed. The engine is almost noiseless except for the rolling noise.
Our test loco was set up with a quite long starting delay, with which it also was possible to approach a train at low speed, decelerate for coupling purposes, slightly pressing on again in order to connecting the coupling with the help of a tweezers. Shunting operations can be done prototypically, which is a real pleasure.
Even at high speed the driving characteristics were absolutely convincing. An express train with eight Märklin wagons was accelerated and driven at a prototypical top speed of 80 km/h

without any problem. A goods train with 20 wagons demanded absolutely nothing of this loco.
When using old Märklin sheet-guided switches and the quite spacious frog some problems occurred and the pusher axle derailed while branching off. If anyone is using material like this on his layout should replace it immediately. For the same mishap could happen with other models, too! Another problem, which probably only occurred with our test loco was that the attached Märklin express train wagons uncoupled on curves at minimum level differences. The couplings of test loco and wagons are differing in height only insignificantly; probably the coupling of the loco has lowered due to transportation and frequently wrapping and unpacking. In this case the coupling just has to be re-adjusted. As a precaution the company is advising on the problem when using claw couplings because of the enormous projection on 1,020 mm radii. Using reversed arches will only solve the problem with some reservations. However, pushing operations even on extremely small radii at slow speed were no problem at all.

Subtitle:
Decoder and sound

All documents relating to the used ESU-Decoder are complete and they include more than just a list of special features, which is not common practice among all manufacturers.
We were really impressed by the sound. The long starting delay is especially accentuating the three-cylinder engine. One almost feels like being transported to the narrow Höllental, where the powerful exhaust strokes are resounding with the rocks several times! Even at higher speed the exhaust stroke is clearly audible, almost staccato-like and severe. The exhaust strokes in the lower and medium speed range, which are frequently used on home layouts, are especially enjoyable.
All other sounds such as whistle, pumps and cab dialogues are perfectly recorded. When switching on the sound the dynamo starts, even if the light is switched off. According to the locomotive drivers the original loco was not running without the dynamo being switched on. Therefore this is no misadjustment of the CV; as a matter of fact it is in accordance with the original.
Beyond various additional sounds also cab lighting and dynamic smoke can be activated. It is also possible to passivate the dynamic smoke via an on-off switch in the water tank in order to avoid any inadvertent activating via the control key leading to a possibly occurring damage.

Subtitle:
Endurance test

The coordination of the engine control is a success; the Maxon engine is running smoothly and powerful at every range of speed. We tested the BR85 007 during at least two hours of continuous operation to a greater or lesser extent and with all speed ranges and there were no complaints at all. Although this wasn’t an endurance test in a wider sense but it was demonstrated that no engine overload must be expected during normal train operation on the home layout.

Subtitle:
Conclusion

The BR85 by KM1 truly is a loco, which virtually leaves nothing to be desired. Apart from the compromises, where the Märklin radii have to be to blame, there is no reason to improve anything. The dimensions are true to the scale of 1:32.
With this model KM1 created a loco, which one had never dared to dream of some years ago: from the realistic and skilfully implemented sound to the wheels with their delicate spokes and counterbalances up to the detailing on the boiler. In contrast to the high-end gauge 1 locos 15 years ago, which usually showed weak points in train operations, the BR85 is not only good for the show-case; as a matter of fact it can be put on the tracks and it shows a gracious performance in all aspects.

I would have fancied this model being equipped with an extended light guidance, possibly as special equipment. In case the loco is used for pushing operations it would have been nice to have red tail lamps; and I also miss the typical shunting lighting – probably these are pretty individual (Christmas) wishes!

Picture headers:

No.	Text
1	This model is a really powerful exemplar of a steam loco: the BR85 by KM1
2	The DB version (left) with Witte plates in comparison with the DRG loco without smoke deflectors: both locos are leaving a deep impression
3	The driver's s side also is perfectly executed; Locomotive driver Manni is obviously looking forward to the first test run
4	The DRG version without smoke deflectors displays the variety of details on the pumps
5	A proper implementation: boiler with wiring and water tank with rivets
6	The coal box is equipped with a hinged lid, similar to the original
7	The Höllentalbahn loco: an amazingly executed model

Box:

Dimensions of the model compared to prototype dimensions taken from the construction drawings

All dimensions in mm	**Original BR85**	**Theoretical 1:32**	**KM1 BR85**
Total length over buffers	16.300	509	512,1
Distance between buffer and buffer beam	650	20,3	19,9
Height above chimney	4.550	142,2	141,3
Height centre line of boiler above track	3.150	98,4	97,6
Buffer height	1.025	32,0	31,2
Buffer distance	1.750	54,9	54,9
Driving wheel/coupling wheel diameter	1.400	43,8	44,1
Inducer/tailing wheel diameter	850	26,6	26,5
Distance between buffer and inducer wheel set	1.650	51,6	53,8
Distance between inducer and first coupling wheel set	2.850	89,0	88,4
Distance between driving and coupling wheel sets	1.700	53,1	53,4
Distance between last coupling wheel set and trailing axle	2.850	89,0	87,7
Distance between buffer and trailing wheel set	2.150	67,2	67,9

Overview:

Available versions	85 001, Epoch II Rw Freiburg 85 010, Epoch II Rw Geislingen 85 002, DB IIIa Rw Freiburg 85 006, DB IIIa Rw Freiburg 85 008, DB IIIb Rw Freiburg 85 007, DB IIIb Rw W-Vohwinkel 85 007, Epoch V Museum loco
Loco number of the test loco / Epoch	85 002 Epoch II and 85 007 Epoch III
Engine / transmission	13-pin Maxon Glockenanker engine 29mm RE-max series, Cardan shaft with 2-way worm, gear transmission ratio 21:1, not retardant
Electricity discharging / traction tyres	No traction tyres, electricity discharging via 8 driving wheels
Axles	All wheel sets spring-mounted and equipped ball bearings, leading and trailing truck equipped with pressure spring
Sound regulation	Via pulse generator on one leading truck
Jittering firebox lighting	Yes
Smoke alternator, cylinder smoke	Dynamic Smoke, smoke alternators with chimney and cylinder smoke exhaust
DCC / Motorola	ESU LokSoundXL V3.5 DCC, Motorola or analogue operation
Decoder features: light changing loco 2-times or 3-times white F1: sound on/off F3: short whistle F5: cylinder smoke on/off F7: cab illumination F9: coal shovelling F11: air pump F13: blow down F15: water pump	F0: light on/off F2: whistle F4: smoke on/off F6: museum whistle F8: train conductor F10: injector F12: checking water level F14: dialogue „level-crossing “ flash

Weight	Loco: 6000g
Price	Early bird price KM1: 2.890 EUR, regular price 3.445 EUR (price recommended by KM1). Optional: Fine-scale version and individual lettering

Comparison of pulled axles

Precondition	
Planar with 2300 mm radius and Hübner switches	32 axles were accelerated from a standing position without any problems when crossing sets of points or on curves. With preset starting delay and maximum speed the loco attains a speed of approximately 80 km/h
Planar with 1020 mm radius and MÄRKLIN switches	7 blunderbusses with illumination without sideslip tendency during acceleration, even when accelerating in bends
Ascending a grade of 45‰ on a 1174 mm radius	7 blunderbusses were pulled and accelerated at low speed, no slippage occurred
Pulling-off on a grade with 45‰ on a curve	The loco was able to accelerate 7 blunderbusses safely and without slip from a standing position

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Category:
Layouts

Bar:
Harbour modules in gauge 0

Header:
Built near the water

Intro:
With a harbour module real shunting amusement par excellence is guaranteed ... and if a fully operational portal frame is at hand, everything is absolutely perfect – and all this with little required space.

Author: Johannes Otterbach, Wolfgang Häußler
Pictures: Klaus Meyer

Port installations are always outstandingly appealing to visitors. What could be causing this? To some extent it surely is the unique interaction of land and water. It is irrelevant if a small barge or an excursion boat is mooring at a course of a river or a lake; if gigantic passenger ships or oil tankers are harbouring at a particularly arranged harbour facility; if a cargo ship is loaded and unloaded by majestically appearing cranes at the inner harbour or if all those tiny cars and trucks or complete goods and passenger trains are boarding a ferryboat. All these particular situations are providing a special attraction.
On the other hand oftentimes a harbour facility is associated with a disreputable and virtually dingy ambience. Not only those who are recalling the large number of “Tatort” episodes, which are taking place at the port of Hamburg or those who remember the songs, which are connecting the world, do know what we are talking about. The most incredible things may happen, even at a smaller harbour facility - not only at night.

The specific excitement of a harbour facility for us railway modellers is the loading sequences, which are taking place among ships and trains. Reproducing these scenarios is our particular interest. If you are only building a harbour facility you will get along with amazingly little space. There is not much free space between the depository warehouses and the quay walls. The clearance for the cargo quays often is only that wide, that a shunting loco is able to make the necessary goods wagons available underneath the loading crane, in order to ensure the embarkation of the waiting ships and backwards.

Of course, harbour facilities are always posing a challenge to model building skills. On the one hand only a few model buildings are available at the accessory market, which can be used for the purpose of harbour building without Kit bashing. On the other hand not enough suitable model ships for representing harbour scenarios are available. So there is nothing left but to investigate on the original and build the ships by yourself. Frequently railway facilities at harbour areas are privately operated, which also has to be considered (in accordance with the chosen Epoch) while implementing to a model. And one has to reflect on the railway sidings: since railway transportation as well as road traffic are usually using the same grounds the tracks must be embedded in accordance with the road level. In reality this mostly is done by the use of paving stones, which is not impractical but difficult and time-consuming to replicate for model use – especially if a very realistic effect shall be achieved by carving

joints in the plaster surface. Especially large harbour facilities are causing quite an ordeal!

Anyone who has decided in favour of a harbour facility surely will not be able to quit this idea. The realization of the model definitely will bring something special to light.

The loading of coal is the focus of the here presented gauge 0 layout. In addition to various shunting opportunities this subject also enables passenger traffic of the daily inward and outward flow of dock labourers. A huge and mobile gantry crane, which enables the loading of coal onto the railway wagons, is crowning this layout in a way.

Subtitle:
A harmonious track plan

Now that the basic ideas for a layout, which ought to be created in a 4m x 3m room, had been defined the depth of the layout was chosen to be 90 cm at most. But the situation changed in view of the fact that the author, a member of the Spur 0 Team Ruhr-Lenne, came to enjoy a space of his own after the club had moved to new rooms in Hagen in the year 2007. For this reason, in opposition to the original planning, now considerably more space for the construction of the modular harbour layout was available.

The result is the subsequently displayed, schematic track plan. The original layout part is shown on the right. The medium part of the layout is serving as a connecting piece and was equipped with a factory site, located in a slight arc. To the left a large storage yard with cold storage buildings and a fruit trade are abutting, forming a 45 degree angle.
The course of the track was designed in a way, that two circumnavigations are possible and also an elongated siding is available, which is forming a slight arc. Thanks to the practical location of the switches and the chosen radii – the smallest radius is 1,20 metres; all other track widths are within a range of 2,40 and 3,00 metres – the complete track course is very harmonious. As long as no connection to the club layout exists, a fiddle yard on the right side is providing for a diversified operation.

Box:

Kick-off for the Hagen harbour modules: the route of the track was sketched onto the modular boxes. The used track material came from the company 0-Scale. The switches were taken from the range of the companies Roco and Peco. The curved turnouts were self-constructed from Hassler kits. For implementation purposes mock-ups are serviceable. „1:1“ building and facility models are cut out of paper and simple drawing board. This is particularly important where flexible layout parts are concerned like the gantry crane in the present case. The paper model allows for a better estimation of the required structural clearance, concerning both, the overhead clearance of the wagons for passing the gantry crane and the lateral limitation between storage buildings and running direction of the crane. Furthermore there ought to be sufficient space for rotating the crane driver cab and swivelling out the crane arm. With the help of a mock-up all motional processes can be checked out in order to avoid any later adjustments, which would be exceedingly difficult.

Picture headers box:

No.	Text
4	The tracks of the coal loading module (in the background) are already installed, in the front area the centrepiece for the connection to another layout part is formed
5	The tracks are already embedded at track height. A mock-up ensures the compliance with the necessary structural clearance of the gantry crane
6	The „skeletal structure“ of the gantry crane is put up, the mock-up in the background is still visible. On the left hand side the inner harbour is formed, which is to be housing the cargo ship

Subtitle:
Digital loading fun

The harbour facility is controlled digitally. All switches are driven by servo motors by Conrad Electronic, the servo activation comes from MTU. The layout is operated via a common (HO) digital control centre from the company Roco.
The multi mouse allows for one-hand controlling of all vehicles, switches and the gantry crane.

The fully functioning crane was designed according to own plans, based on a H0 gantry crane by Roco and self-constructed.
Chassis and actuation of the crane are located underneath the layout surface. Via a wire drive the engine power is transmitted to the gearing and the rotating assembly of the crane. Ropes and engine are coming from Conrad Electronic. The superstructure and the crane boom are made from polystyrene. All components were laser-cut by the company Zapf-Modellbau.
The brazen loading shovel of the crane is originating from NZG. Via a separate wire drive the shovel can be opened and closed in a realistically slow manner.
All functions such as the movement of the crane, the rotating of the superstructure, the lifting and lowering / opening and closing of the shovel and also the illumination is digitally operated via three ESU decoders.

The actual operation of the crane of course does not take place until real payload is ready to be loaded from the quay onto a ship – just like here in coal form. Since no appropriate model in a scale of 1:45 was to be found a cardboard model (Schreiber) was scaled to the required size. Afterwards all parts were reinforced at the hulk area in order to increase the stability of the model. With the help of retrofit parts from the ship modelling supply a very appealing barge model did emerge; original barges can be observed still today, for instance on the Rhine.

Subtitle:
Embodied landscape

Even the buildings on this layout were self-constructed for the most part. Just the two plant buildings at the platform, the storage shed and the fruit trade are taken from suppliers of accessories Walters and Zapf-Modellbau. Due to the limited space all building except of two were designed as semi-relief models.
The self-constructions were made from wood, expanded plastic slabs, brickwork boards from the companies Heki and Vollmer, and some of them with the help of components out of remaining construction sets. The walls of the cold storage room were made from „Depafit“

boards (DIY) and coated with grouting. The roofs and doors were made from crinkled cardboard and the edge profiles were constructed by using polystyrene from the model-building market. The ultimate paint was given by using airbrush, a common acrylic paint and afterwards some powder paint was applied.

In order to grant some landscape to this industrially influenced layout all remaining undeveloped areas received intensive greening by applying grassing material (Heki, Noch and Woodland) via a grass-master. The spacious bushes were made from filter wadding (pet shop), colourised with Noch landscaping colour and sprinkle material, affixed with the help of spray mount.

The surface area between roadway and railway sidings was mould as a concrete area. Predominantly it was made from hard plaster and Keramin (crafts supply), all joints were scratched using a scribing iron. The paved drainage channels were also carved into the hard plaster and treated with colour afterwards using the already mentioned mixing technique. Finally, some subtle shades were carved out with the help of coloured pencils.

The illumination of the harbour facility was carried out by Brawa lamps, the delicate girder mast lamps at the embark point were coming from Weinert, the telephone box from the company Viesmann and all figures were bought at Schuco and Preiser.

The number of shunting locos in the harbour area is quite modest. In addition to a V36 and a Köf from the company Lenz the Industrie- und Hafenbahn AG “Loco No. 14” is operating at this spot, which is emerging from a modified Pola chassis. The undercarriage of this loco was completely designed anew by the company SAIC-Modellbau. All retrofit parts except for the lamps (SAIC) were coming from Schnellenkamp. Due to the digital control via a Lenz Gold Decoder with power chip the driving characteristics are leaving nothing to be desired.

The used wagons on this layout are Rivarossi refrigerator wagons and Lima open qagons as well as flat cars and covered wagons out of the Pola maxi range. The G10 wagons are coming from the company Lenz. All wagons other than Lenz were additionally equipped with Schnellenkamp retrofit parts such as shunter’s stairs, buffers and screw-type couplings.

Despite the rather small vehicle fleet versatile shunting movements are possible – and as soon as the layout will be connected to the huge club layout … even more variety will be guaranteed!

Box:
Our special thanks go to the Spur 0 Team Ruhr Lenne e. V. for their consultative support in building up the layout, especially to Gerd Backhaus and Matthias Hess.
Further information: www.spurnullteam.de

Picture headers:

No.	Text
1	Complete overview of the harbour facility
2	The embark point in front of the cold storage buildings; the girder mast lighting comes from the company Weinert
3	Loading scenario at the connecting module; on the right: just now the V36 has parked a unit of refrigerator wagons at the embark point
4	(see box)
5	(see box)
6	(see box)
7	6:30am: brisk business at the industrial plant; the Köf is about to picking up the loaded G 10 wagon
8	With the aid of the Fuchs excavator a load of steel rod mats is consigned
9	Not only train shipment but also lorry transport is playing an important part at the harbour layout
10	The industrial plant, located at the connecting piece between the left and right layout segment. Imposing: the self-manufactured semi relief buildings
11	Just now the loading barge is mooring at the dock with a load of coal
12	Loco No. 14 is waiting to removing the gondola car train, which is loaded with coal
13	The mighty gantry crane at the coal embark point is looking really majestically
14	Significant: the quay wall at the dock; very beautifully designed: the transition between “land” and “sea”
15	Still under construction: an additional coal stockyard is coming into being
16	The schematic track plan shows a harmonic course of the track in the harbour area
17	The cold storage house at the left part of the layout
18	It really is a must for the physical well-being of the dock workers: the chip shop

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Gauge 1

Category:
Modelling

Bar:
Self-construction of series 50 in Gauge 1, part 1

Header:
Two 50s for the 50th birthday

Intro:
What if two model making freaks – and on top of that twins - are having the courage to build two steam engines, series 50 – the result can only be promising – see for yourself!

Author: Hans and Walter Ziegler
Pictures: Jörg Chocolaty, Manfred Weihrauch

Ever since we have been little kids we are interested in the topic of railways. Apparently we inherited this virus from our grandpa, who earned his living as signal tower master at Pforzheim central station. So what would be more obvious than asking for a model railway for Christmas. In the year 1957 finally the time had come and sure enough a Märklin railway was lying underneath the Christmas tree respectively was raised up against the wall, which was an upgrading of the so far used clockwork driven railway.
This was an expensive affair since our father had to support a seven-person family.

In the long run the very simple Märklin locos were no longer inspiring and in the year 1972 we switched to the two-wire direct current system.
The Fleischmann BR 01 and BR 50 were the first locos we purchased. The BR 01 was standing for the month of January and the BR 50 for our year of birth.

Subtitle:
Heading for the „50“ in a scale of 1:32

It was an announcement of the company Merker + Fischer, where modification sets for the BR 01 BR 01.10 and the BR 03.10 were offered, which was arousing our model building excitement. Henceforward there was no holding back. Collecting a selection of DB steam engines of each existing series was our ambition.

After our first work, a BR 94 in gauge 1, manufactured during the years 1985-88 and since our HO collection was already completed, we planned to continue doing further gauge 1 modelling.
The decisive factor for building a BR 50 in a scale of 1:32 was a visit at an aunt’s house overlooking the Wutachtal (Black Forest). During our outward journey, the rail-crossing gate at “Zollhaus-Blumberg” was closed. After a short waiting period the 50 2988 was passing by – what a spectacle! Even before the gate was opened an idea was born: building a 50 and completing it before our 50th birthday.

For various reasons we were not able to meet this timetable at all. Alternatively, we crowned our "half-century" celebrities four months later, at 13th May 2000, on occasion of a cab co-ride on the 50 2988.
Since this very day our romantic feeling for the profession of a locomotive driver evaporated. What the two drivers achieved during the trip from "Weizen" to "Zollhaus-Blumberg" was absolutely incredible, heavy labour combined with utmost concentration. From this day on we followed the venture of our „BR 50 in gauge 1" emphatically!

Subtitle:
Concept and preparation

Right from the start we made it our goal to create a model, consistently implemented in a scale of 1:32 and equipped with all striking prototypical details. Among other things that includes the Krauß-Helmholtz pony truck, a four point support of the undercarriage, a functioning axle bearing suspension at the tender and above all doors and flaps which can be opened. For self-security reasons the model was not equipped with a drive of its own. The intention was not letting the BR 50 operate on the layout but rather serving as an attention-getter at the Rw.

Then we concentrated on collecting literature and documents in order to reading up on who was delivering which components. Purchasing the illustrated books "„Die Baureihe 50", EK-Verlag was very helpful, indeed, particularly because of the technical and structural details and the original drawings in Volume 1.
Detailed measures, which could not be found in the drawings, have directly been taken from the original engines. For we had "our own" example of the 50 2988 at our hand at the "Wutachtalbahn" and we had the chance of having a 50 1650 memorial loco in Aulendorf.
Consequently we drove to Aulendorf and Fützen several times in order to drawing sketches and taking pictures.
Our special thanks go to the operating staff of the Wutachtalbahn (WTB), especially to the manager Valentin Stöckle, who was ready and willing to spend his forenoon off in order to taking us to the inspection pit at the Fützen engine shed for examining the braking system at loco an tender.

After this pursuing the applicable implementation material was on our list. Pretty soon we discovered the appropriate components at the mail order GHW, at Hassler-Profile, Knupfer-Feinwerktechnik and the companies KM1, Kiss and Wilgro.

Subtitle:
Here we go! The manufacturing starts

In a good mood we approached the execution and upon eating, the appetite was increasing: What we mean is: the more the model was flourishing the more ideas were emerging. This certainly may be due to our frequent visits at the Rw Fützen, where we had the chance of visualizing more and more worth implementing particulars and details. And still there is room for improvements and refinements, just like a bottomless pit, but some day you have to pull the plug.
Our pleasure in modelling was always ranking first and not just the thought of "what might go wrong or how much time and effort might have to be spent". Because here too, the same applies as in real life: the proof of the pudding is in the eating!

The creation of design and detail drawings took approximately one year. For the production of the etch drawings we needed the same period of time. While developing the construction not only the manufacturing of the components is important but also the answer to the question: how can all parts be connected to each other and above all how can they be disassembled again for painting purposes.
When working out the drawings it is helpful to specify the total dimensions and the dimensions with reference to the coordinate system. In the vertical direction (y-axis) the track top edge was chosen as zero position, in the horizontal direction (x-axis) it was the rear wall of the cab. In doing so it was possible to verify accurate positions of all components on the basis of single part drawings and sectional drawings.

In the end almost everything fits properly into the etch plates except for the control rack. We just didn't attend to the fact that the cylinder area of the loco has to be more broadly than the original for the wheels are laterally shiftable.

During the design and planning phase already some of the components, which had been finalized in terms of drawings and dimensions, were manufactured. In November 2003 we started manufacturing of the single parts.
The frame flanges of each locomotive were cut in pairs from 2,5 mm brass plates using the cross table of a milling machine. In doing so elevated concentration was necessary in order to avoiding any incorrect cuts, which would mean that all the previous work was for nothing.
Thank God we were untroubled by such an accident. All required boreholes were also machine-made, simultaneously.

In a more relaxed condition we continued by manufacturing the spring packs, which were cored out of phosphorus bronze sheets.
The frame cover sheets were also milled out of 2,5 mm brass plates. Thereby L-profiles in a 2 mm x 2 mm dimension were created at the side parts of the frame, while the planar area was milled to a thickness of 0,7 mm.
Now other milled components, such as the frame spacers, the trailing box, the smoke box door between the frame, the axle bearings, the buffer beam, the motion link carrier, the pony truck and the suspension compensating levers were manufactured.

Once the Heller wheels had arrived and were pressed onto the axles together with the axle bearings at KM1, and the company Saemann has delivered the etched sheets according to our template almost at the same time, we were able to initiate the assembly of the already arranged frame components.

Subtitle:
The chassis comes into being

During assembly we divided all tasks, which proved of value for simplifying the timing of the second model.
Walter was in charge of the installation works on the locomotive and Hans for the execution of the tender. Of course, this schedule of responsibilities did not exclude mutual "administrative assistance" and especially difficult soldering, milling or boring works were executed jointly.

All components on the chassis, except for the wheels, were self-manufactured from brass material.

First, the side parts of the frame were bolt together and spaced using spacers, the trailing box and a cylinder transition piece. In the same way the chassis covering plates were installed. As soon as the whole unit was right-angled the components were soldered.
The transfer of the side part boreholes to the L-profile of the covering plate was quite time-consuming. For connecting purposes model hexagon bolts and model nuts were used.

The next step was the insertion of the RP 25 wheels and the installation of spring packs, equalizing levers and the Krauß-Helmholtz pony truck. First the nuts were screwed to the equalizing levers; then the chassis was placed on the track. The nuts were adjusted until the upper edge of the frame reached the height of + 38,00 mm above rail level.
The whole weight of the loco is absorbed by spring packs (phosphorus bronze sheet 3,5 x 0,3 mm) and M 1,2 eyebolts.

After another visit at the inspection pit of the Rw Fützen, where we took pictures from the brake linkage and the brake system, all these components were manufactured and attached one after the other. All parts of the brake system were self-constructed as well as the brake shoes and holders, the brake cylinder and the flexible brake linkage. Only when mounting the brake shoes plastic components were used, namely the bushings inside the brake shoe levers. All other components on loco and tender are made from brass.
Bit by bit, using further milled and etched parts the chassis was complemented.

Worth mentioning is the production and mounting of the cylinders onto the frame.
All cylinder wall components are made from etched and turned parts. The steam admission and the exhaust chests are each consisting of eight etched parts, soldered on top of one another.
First of all, seven parts of the steam admission chest were placed on top of each other, bolt and soldered at the centre holes. The chamfer was produced with the help of a rasp. The grooves of the reinforcing ribs were already etched. They were deepened with the help of a jigsaw and then the ribs were put in place from behind. Afterwards the steam admission chest was screwed and soldered to the base plate. For honing purposes again a rasp was used.

In a similar manner the cylinder covers were manufactured. The etched flange was put on top of the turned piston cover and affixed in place. Then two of overall 24 boreholes were transferred and both parts were screwed together. As soon as the transfer of the remaining boreholes was completed the two screws were removed again.

In the front and rear wall of the cylinder all necessary boreholes for steam admission chest and cylinder cover were etched. After boring up the etched holes the steam admission chests and the cylinder covers with flanges were screwed onto the base plate.
Finally all components were flame-soldered with each other.

Supplementary boreholes for the slideway bearing support were drilled into the gear-sided rear cylinder cover.
In order that the two cylinder walls remain parallel and are positioned with the correct distance between each other at their final state the turning lathe was used to turning two thin-walled tubes in an adequate length and diameter. With the help of threaded rods and nuts, which are locked on both sides of the cylinder walls, the turned parts are connected with one another. By using the boreholes for coupling rod, piston rod protection pipe and valve the threaded rods are receiving guidance and consequently the cylinders were becoming a solid unit.

In order to building the cylinder the mounting plate, which was equipped with ribs before, was attached on the frame side. With the help of inner L-profiles and planished screws the plate was mounted and soldered to the cylinder.
The cylinder barrel is consisting of 0,2 mm brass and was soldered, too. For difficult operations like this Walters knowledge and master body works skills were of great benefit.
The self-made relief valves and drain valves as well as the supports for the actuation unit were then installed into the assembled cylinders. In order to ensure that no security bolts, which would not correspond to the original, are bothering the eye of the beholder, a vertical cylinder fastener was attached to the frame. For this purpose the side part of the frame received a milled edge and the cylinder was equipped with a fixation piece in the dimension of the frame width, which fits accurately into the milled-out portion. Via vertical boreholes on the frame and threaded holes at the fastening piece of the cylinders and the use of M 2,0 countersunk screws they are affixed to the frame securely and in an accurate position.
Even more challenging were the circumferential boards. They had to be placed absolutely in parallel and flat in the lateral and longitudinal direction.
As soon as all (etched) swing and supporting plates were equipped with L-profiles and bolt to the frame the elevation was checked with the help of angle brackets and a ruler. No problems, everything is fine.

Now the cab has to be manufactured and mounted in order that the longitudinal direction of the circumferential boards received a fixture. All components of the cab were ripped out of etched plates, cleaned, aligned and safeguarded. Once there was no further reason for complaints all brass parts were flame soldered. Since the boreholes for all 128 screws and rivets on each side of the cab had been etched through the mounting of these miniatures (rivet diameter 0,4 mm, rivet head diameter 0,6 mm, screw imitations SW 0,6 mm) made a good progress.
Simultaneously the end plate of the frame was mounted. A soon as the longitudinal profile underneath the cab was soldered between the endplate of the frame and the support of the circumferential board the cab was to be attached and affixed.

A template for the circumferential boards made from sturdy cardboard was crafted and transferred to a piece of chequer plate (one of the seven etch plates in use).
In order that the circumferential board does not appear unvaried, prototypical individual plates were cut and placed on the templates, parallel to each other.
Now the chequer plates were soldered to L-profiles in different dimensions and connected to the support plates. Both, soldering gun and flame have to be handled with care. Cooling paste was applied at the soldering points in order that the generated heat cannot diffuse in an unregulated way. This paste is not a universal remedy, though. Especially, if it gets too warm and contaminates the soldering point. If this happens a dark or black coating will appear on the brass surface immediately and the magnificence will be gone.

After the circumferential boards had been firmly attached to the frame the assembly of the brass precision casting parts was initiated. The Indusi (inductive train safety device) magnet, the load brake valve and all fittings below the board were self-crafted after we had taken some further measurements at the Rw.
Overall, Walter worked almost two years building the chassis and the circumferential board. The only accessory parts on the chassis are the two pumps and the piston rod protection pipes as well as the cable supports and the power distribution boxes, which were bought out of the small series range of the companies KISS, KM1 and WILGRO.

In summer 2008 the chassis for both models were completed. Now you may ask yourself, what Hans has done during all this time while Walter was building the chassis?

He was creating more drawings, assembled the tender and was giving administrative assistance if required.
Vice versa Walter manufactured the required tools whenever Hans needed some, for example a manual bending fixture for the fabrication of compound springs or superheater flues.

In the next issue we will report on the further stages of construction.

Picture headers:

No.	Text
1	Bottom view of the chassis of the 50
2	Detailed bottom view: suspension of the pusher axle, the cylinder block and the buffer beam
3	Overall view of the chassis after the first assembly, the circumferential boards are already mounted
4	The Krauß-Helmholtz pony truck with prototypical shaft and equalizing levers
5	The cylinder with covers, screwed in place
6	The main air reservoirs, arranged underneath the circumferential boards
7	Lots of details: the cylinder with screw joints, ribs at the steam admission chest and the piston rod protection pipes; very beautiful: the rivet imitations at the sheeting; centre: the superstructure for the outer firebox suspension
8	The frame with cylinders, (RP 25) pusher axles and driving axles, the drive linkages and the brake system after painting
9	First pusher axle with pony truck and drive axle after painting; clearly visible at the rear: the driving wheel suspension
10	Coupling rods with support for the bolt
11	Coupling rods with wobblers and joint bolts after installation; remarkable: the safety splint pin at the bolt
12	The frame with main air reservoirs
13	The newly painted “factory new” cylinder
14	The accomplished beauty; more on that in the next edition of the 012-Express!

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Category:
Vehicles

Bar:
The Lenz Pwi-31a luggage van in gauge 0

Header:
Package with a fine view

Intro:
In addition to the Epoch III blunderbusses type ABi / Bi the company Lenz currently has delivered the adequate luggage van Pwi-31a – our portrait

Author: Wolfgang Häußler
Pictures: Manfred Weihrauch

The V36 together with three or four blunderbusses and a luggage van – a beautiful and classical Epoch III train set on branch lines! With the support of the Pwi-31 this typical train can now be implemented to model railways in a scale of 1:45.

Subtitle:
Reflections on the original

As from 1931 the German State Railway acquired a total of 302 luggage vans type Pwi-31a (replacement). Compared with the previous model –Pwi-31 with a total amount of only 30 vehicles – the new vans with a total length over buffers of 12.850 mm were 70 mm shorter than the forerunners and their loading area was 21,4 m² with a payload of 7 t. Just like the Pwi-23 vans, which had already been built at the end of the 20s the bodywork was made from steel. In contrast to the first series the roof structure was made from steel instead of wood. The Pwi-31a roof, a modification of the Pwi-27 - 29 roofs, was again carried out with a less arching, which enabled the train driver to watch the train far better out of his extended view roof. Another difference of the Pwi-31 and -31a to the former luggage van types was the threads, which were attached directly underneath the doors, only. Circumferential footboards were omitted. The entry areas were no longer bevelled (starting with the Pwi-28 type) and the revolving doors were replaced by sliding doors. Inside there was a storage space and an entrance area, a lavatory and a duty room. There a packing master desk was arranged and also a raised stand was to be found, which enabled the driver to overlook the train. Furthermore several tool and spare parts cabinets were available inside the van. All wagons were equipped with a Kunze-Knorr P air brake and a hand brake.

Subtitle:
The model

The Lenz model of the luggage van Pwi-31a is complying with the original Epoch III vehicle, like it was to be found in the vehicle fleet of the German Federal Railway until the year 1979. The vehicle sequence number 117 725 is matching the type series of the year 1931.
Like the blunderbusses the luggage van also was made from synthetic material. The model is equipped with metal wheel sets and a flange height of less than 1,2 mm. The delicately looking wheel sets are providing for very good running characteristics of this vehicle. The

headstocks are equipped with spring buffers and the popular Lenz close coupler motion link. By means of the standard chute the coupling can easily be replaced by the accompanying original screw coupling. The coupling hook is already mounted. The total length over buffers of 286 mm is exactly matching the original.
The brake system at the bottom side of the car floor is completely replicated.
Both, carriage body and roof are properly executed and equipped with numerous, delicate rivets. Handholds and stair treads are attached in accordance with the original. All windows are inserted in a neatly way. The front sides are equipped with folding transition sheets. Merely the roof entrances are somewhat inelegant. The lateral sliding doors can be opened revealing the luggage compartment. If necessary, the floor may have to be re-treated in terms of colour. The roof can be demounted. The interior decoration of the drivers cab is completely replicated and for a better view a raised stand is included. A corresponding driver has to be added.
Thanks to the decoder, equipped as standard the interior lighting of driver and luggage compartment can be switched separately. The LEDs are providing for a pleasantly soft light. Also during analogue operation the interior light is reflecting a constant and flickering-free illumination.
The green painting of the bodywork is prototypical (RAL 6020). Lettering and DB emblem are carried out in a neatly way. The specification „117 725 Ffm“ is matching the deployment location of the original at Frankfurt/Main after 1945 (later Karlsruhe, followed by Stuttgart). Today the original is to be found at the DGEG in Würzburg.

The Pwi-31a is a perfectly executed addition to the Lenz blunderbusses – and the recommended retail price of 199 EURO really is acceptable. We eagerly anticipate the PwPosti-34!

Information concerning the original:
Deppmeyer, Joachim:
Die Einheits-Personen- und Gepäckwagen der Deutschen Reichsbahn. Bauarten 1921–1931 – Regelspur.
Verlag Franckh, Stuttgart 1982
(ISBN 3-440-05111-0)

Picture headers:

No.	Text
1	The Pwi-31a in action: especially in the dark the soft interior lighting is showing to advantage
2	The close up shows the outstanding execution of the synthetic model
3	The open sliding door opens up the view onto the luggage compartment
4	The two front sides of the Pwi-31a; if one prefers a more delicate look the ladders may be replaced by suitable retrofit parts
5	The floor with the replication of the complete brake system
6	No matter which side: the Pwi-31a leaves a lasting impression
Parcel	Separately attached: original couplings and brake hoses

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Category:
Modelling

Bar:
A trainload of logs (not only) for Lenz articulated wagons in gauge 0

Header:
Extra-long cargoes

Intro:
After our report on the Lenz H10 conversion in the last issue, this time the trainload of logs will be the topic – also alternatives for wood transport using other freight wagons will be presented – have fun!

Author, Pictures:
Jaques Timmermans

Meanwhile the accessories industry is offering all sorts of payloads. Some of the items normally can be self-constructed at home quite easily, for example loads of tubes, wood or natural stones. The manufacturing only requires some drinking straws, a piece of black tape, matches in different lengths or some walnut branches, small natural stone leftovers and a little glue, paint or stain. The advantages of natural materials are quite obvious: they do look authentic, the manufacturing is reasonably priced and the treatment doesn't require any special tools.

Subtitle:
Workshop equipment

Until the triumphal course of road traffic all sorts of wooden products were forwarded via rail transport almost exclusively. This cargo also has a special appeal for model railway use, particularly if solid timber is used, which can be procured quite easily. At best, some bundled and cut-to length walnut branches will suffice, or some matches or meat skewers, which can be treated with the help of a jigsaw with a finely toothed saw blade. In case loads of planks or boards are requested some suitable workshop equipment and knowledge concerning loading rules are necessary in order to achieving an expedient result. The most important tool is a model-building circular saw with a straight-set fine-tooth saw blade (e.g. Böhler or Proxxon).

Subtitle:
Choosing the type of wood

Chips and jagged edges can be avoided if the correct type of wood is chosen. The main thing is not the differentiation between hardwood and softwood. Fine structured timber such as beech and oak, pine, walnut or balsawood is serving best for the production of planed board or plank loadings. The required boards and planks just have to be sawed out with the help of a circular saw and no further treatment is necessary. In doing so you should be very careful with your fingers!

Mine timber and loads of wooden poles can easily be made from round timber with a 4 – 5 mm diameter. Round timber in various diameters can be purchased at well-assorted hobby shops. Another option is the use of wooden shashlik spits, although the required amount should not be underestimated: several metres may be required.

Subtitle:
The logging

There are manifold manners of forwarding timber to the processing industry. Tropical trunks, which are imported from overseas via ship, are mainly forwarded to the recipients per rail. On the contrary domestic timber is, in the majority of cases, loaded close to the forest. The railway is predominantly using flat cars with reinforced stakes for this purpose. Loggings like this can easily be reproduced by using branches with a diameter of 25 - 50 mm, which can be found everywhere in the forest. Suitable (softwood) strips are also required. Very suitable are young walnut braches. They are cut into equally long pieces by using a hacksaw, a looping shears or a small circular saw bench. The length is variable and depends on the length of the loading area on the wagon. Please make sure that a loading area of at least 10 mm is remaining in order to avoid any overlapping. Depending on the timber dimensions and the size of the wagon three up to five "trunks" or an adequate amount of planks or boards are required. If planks or boards are used, please keep the carrying capacity of the used wagon in mind.

Subtitle:
Goods wagons for the wooden payload

Loaded goods wagons are giving variety to every model railway. A variety of wagon types are qualifying for timber forwarding. One example is the 4-axle stake car with bogie. In Epoch II and III the wagons, type SSk „Cologne" and SSk 07 with five stakes each side are applicable. Typical for Epoch IV are the RS[684] and RS[687] types of wagons, which are equipped with eight retractable stakes at each side. Epoch V enthusiasts may choose the signal red Snps[719].
Two-axle stake cars with or without stakes, for example Epoch II Rs „Stuttgart" or the Epoch III type Rmrso 31 – with or without brakeman's platform – are better suited for transporting stacks of wood, only under specific conditions they can be used for log forwarding. But the articulated wagons type H 10 and their DRG equivalent H „Regensburg" can be used separately or as a pair, connected via coupling rods. Even a train-set of up to four wagons can be used, connected via screw couplings.

Subtitle:
Train-sets

According to the German goods wagons specifications, released in the year 1909, individual articulated wagons type HRu or type Hr from1911 onwards, with a maximum loading length of 8 metres and equipped with iron stakes are mandatory for forwarding millstone spindles, track profiles and logs. The ends of the stakes are equipped with chains, so as to securing the cargo, connected in pairs. If necessary the centre pivot plates can be removed with the help of special tools. Payload with a length of 8 up to 21 metres has to be forwarded using timber wagon pairs with centre pivot plate. Often these wagons are equipped with chains, located at the retractable stakes on the centre pivot plate in order to ensure a better fixation of the payload. In case the payload is longer than 10 metres an individual timber wagon type HH, a pair of two Hr typed wagons, has to be used. For payloads of 10 up to maximally 15 metres the individual wagons of the timber wagon pair have to be elongated by using coupling rods (the so-called HHs type) to ensure that the load does not protrude the headpiece or the brakeman's platform. If the connection of the articulated wagons is carried out via coupling rods (rigid couplings) each wagon has to be burdened with a minimum weight of 7.500 kg

and special operational regulations have to be observed additionally. Payloads longer than 15 metres can only be forwarded via timber wagons with tooth centre pivot plates (type HHz). They do not possess a coupling rod and do transmit the traction and the impact force to the wagons via the payload. In this case the wagons are connected with each other via the log alone and therefore they have to be placed at the rear of a train. Any banking of train-sets like this is forbidden.

During the DRG era and according to the rules of the German state railway association timber wagons only were permitted to operate as sets of equal types (in terms of loading space, wheelbase, carrying capacity, special equipment), which were belonging to the same administrations. The Prussian railwaymen even had to meet more stringent regulations: all wagon pairs had to possess consecutive train numbers.

The timber wagons operating during the German state Railway era mostly were very short. Only in Bavaria wagons with a loading length of up to 8 metres were to be found and they were universally applicable: as individual timber wagons with iron stakes, as low side cars with turndown side frame and head rim or as a part of a timber wagon train-pair with centre pivot plates. Lateral stakes, side frames and head rims could be removed. The standard layout timber wagons with a loading capacity of 15 t were assigned to type H 10. As from 1967 the last timber wagons type H 10, once design A 5, were renamed in Lck 531.

Subtitle:
Stocks of wood for model use

Stocks of wood can be produced with the help of individual planks, boards or logs. It is more effective if the pieces of wood are slightly displaced side by side or on top of each other and stored in parcels. The stocks are bundled with the help of steel tightening strips and can be loaded via a forklift. On the wagon floor and among the stocks some more massive pieces of wood are helping to keep some distance.

The first step is to determine how many planks are side-by-side fitting onto the loading area of the wagon (e.g. type H 10. As soon as the maximum width of the stock of wood is determined the wooden planks can be produced. When determining the width the smallest radius on the layout has to be taken into account in order to avoid any collision with the stakes while passing narrow radii. If individual stake cars are used this precaution may be unconsidered. In this case it even is tolerable if the load of wood is in contact with the lateral stakes.

If matches are used the heads have to be removed first and then all chippings and fibres on the trimmed edge have to be removed by using some fine sandpaper. The “logs” have to be affixed by using a tape strip in order to avoid any shifting while gluing. As soon as the glue is hardening the strip can be removed. Now more stocks of wood can be affixed at regular distances. While the glue is hardening planks and stocks of wood have to be weighed down with an iron block for example.

This work step has to be repeated until the stock has reached the desired height. Please make sure that the maximum loading height is maintained (check with the help of a clearance gauge calibre) and the loading capacity of the wagon (original: 15 t) is observed. Then, the stock of wood has to be adapted to the width of the loading area. For this purpose the “package” is placed on the loading floor, the internal dimension is transferred to the stocks by using a pencil and the protrusion is cut-off with the help of a scalpel or a saw. All other

stocks of wood have to be shortened likewise. Finally, the individual layers are clamped securely with the help of 0,1 – 0,2 mm copper wires or steel tightening straps (black tape, dimension 0,3 - 0,5 mm). Similarly, the wooden layers are secured among one another. And finally the timber package can be loaded onto the coupled pair of wagons.

Subtitle:
A load of logs

The production of long logs is pretty simple. Once the desired length is chosen some suitable "raw logs", selected from walnut branches are cut to the required size by using a saw. When using uncoupled timber wagons the occurring traction and impact forces are transmitted to the wooden payload, similar to the original. In order to avoiding any shift of cargo and operational accidents, a secure chaining is required. This is done best by connecting the logs among one another with the help of small steel pins. Additionally the payload should be firmly connected to the centre pivot plates in order to ensure secure operation. So the two uncoupled wagons are, similar to the original, only connected with each other via the payload. This can easily be achieved by pinning the load onto the centre pivot plates. Two metal pins with a dimension of 0,5 - 0,7 mm have to be bonded onto the log, accurately underneath the centre. The centre pivot plates will receive some adequate boreholes in order to supporting the pins. That way both wagons are rigidly connected with each other without any coupling device and a safe operation on the layout will be guaranteed.

Subtitle:
Lashing the payload

Today the securing of payload on trucks and wagons is made via lashing belts. In former times chains were used for this purpose, which were tightened around the stock of wood using a hand winch. Tightropes and solid iron wires were used, too. For model use the ropes can easily be manufactured by using some narrow adhesive tape (e.g. Weinert Art. No 9340 with a width of 0,38 mm or Art. No 9341 with a width of 0,51 mm). An applicable piece has to be cut off the spool and pasted onto a glass pane or a cutting mat. With the help of a steel ruler and a sharp Stanley knife / scalpel a straight outer edge can be achieved. Via parallel cuts of equal size the required bands are manufactured. Model chains in different dimensions can be obtained at the company Weinert for example (Art. No 9317). Iron lashings for model use can be cut from thin copper wire (0,1 - 0,2 mm). The tightening belts have to be glued around the stocks of wood. Depending on the cargo they have to be glued among one another in addition and afterwards they are, together with the lashing belts, mounted onto the loading surface of the transport equipment. In order to achieving a long-lasting and secure connection, a drop of mat clear coat has to be applied onto the edges of the model lashing belts. Almost every stake car and flatcar is equipped with only indicated lashing eyelets. The replicated lashing devices therefore should be affixed at the lower longitudinal girder of the stake-supporting frame. They can also be thread through the upper part of the stake pocket. Alternatively, the lashing eyelets can be bored horizontally or slanting downwards by using a spiral drill. Afterwards the lashing belt or rope just has to be glued into the round hole.
Load safety chains can optionally be attached to the payload or the wagon. Now the wooden payload is safe to start its journey!

Picture headers:

No.	Text
Drawings 1-4	Schematic diagram of the different wooden loads on articulated wagons; A: a payload of logs on a coupled pair of wagons; B: single wagon with short logs; C: stock of logs, connected to the articulated wagon via a coupling rod; D: a large log on separated articulated wagons

No.	Text
A	With the help of a circular saw bench (e.g. Böhler) the individual wooden strips are cut-to size in no time
1	The untreated cut end is smoothed with a grinding sponge
2	Some green stain or red paint is used to colourise the head side of the logs, similar to the original
3	Some white glue is used to adhere the wood layers to the crossbeams. Later all layers are tied up via tightening belts or wires
4	The stock of wood is weighed down until it is hardened
5	Tightening belts are simply replicated by using thin black adhesive tape
6	Projections of the model belts are cut off with the help of a scalpel
7	The ends are fixed additionally by using some mat clear coat
8	The log layers are connected with some fine copper wire
9	The log layers are glued to the footboards to produce stacks of wood
10	Some wire is used to brace the wood layers and afterwards the ends are twisted
11	The lashings are fastened onto the long side of the wagon
B	An articulated wagon, loaded with a log package. The different dimensions of the tightening wires are clearly visible. The mandatory safety chain is already connected between the stakes.
C	Two Lenz articulated wagons type H10, loaded with a package of logs
D	A Lenz stake car with a load of wood. The payload is lashed properly and the tail end indicators are installed – the journey can get started - bon voyage!

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Gauge 0-1-2

Category:
Modelling

Bar:
Wooden boxes for payload – in gauge 0, 1 and 2

Header:
Well-packed cargo!

Intro:
These wooden boxes are not only suitable for part-load traffic in order to protect the payload on the train – a nice leisure-time handicraft-work

Authors: Patrick Dalemans, Wolfgang Häußler
Pictures: Patrick Dalemans

The forwarding of goods is still today one of the major tasks of the railway. During the time before containerizing became customary mainly covered freight wagons or O-Wagons (amongst others for machine transporting) were used. Fragile and non-weatherproofed goods therefore had to be packaged in a laborious way and still today mainly wooden boxes are used for this purpose in addition to plastic and metal boxes.

These days various model carrier boxes are available at the aftermarket. For all large gauges companies like ASAO and Paulo are providing for the necessary carrier boxes for model railway use. They are also available as solid timber boxes.
Plastic imitations of wooden packages are also available. The disadvantage of this solution is that they can hardly be cured in terms of colour and will always remain plastic-like.
Anyone who prefers loading scenarios with individually designed wooden packages should resolve to self-constructed ones, especially because absolutely individual items can be manufactured with little effort.

Subtitle:
Individual boxes

Concerning the necessary material only a few wooden strips and, if necessary, small pieces of wire for replicating nail heads are necessary. For gauge 0 wooden strips in the dimension of 0,7 x 2 - 0,7 x 3 mm are required, for gauge 1 a dimension of 1 x 3 - 1 x 4 mm should be used and for gauge 2 strips in a dimension of 2 x 3 - 2 x 4 mm have to be chosen. These recommended measurements do ensure that the boxes will not appear too clumsy in the end. The wooden strips can be purchased at model ship suppliers (such as Aeronaut) or at any supplier for architecture models. All kinds of timber are qualified for this purpose. If you are a fan of the iced-lolly you should collect the wooden leftovers – you never know. In the following simple pine strips were used to manufacture the wooden boxes.

In order to standardize the dimensions it is advisable to create a calibre first. This can be manufactured easily by using a plywood board with stop angles from (larger) wooden strips, which have to be accurately adjusted at a right angle. According to the position of the cross

bracings, notches or marks for the sides of the boxes have to be inserted in the wooden strips. In doing so exact dimension accuracy is given.
Then the pine strips have to be cut to length. The easiest way to do this is with the help of a small circular saw bench (e.g. Proxxon). Depending on the desired size the perpendicular standing bracing strips have to be cut to length, too. It is important to make sure that the bracings are overlapping at each end at the size of one strip. During further bonding an exact completion of the external bracings will be achieved hereby. For rectangular boxes the bracings of the shorter side plates often are arranged inside the boxes. They can be arranged corresponding to the outer end of the side parts and cut to length exactly on a lever with the lateral height. At all other lateral sections and at the head and base plate the upright bracings have to be displaced laterally and mounted with an accurately similar spacing. The figure illustrates the position of the cross bracings.

Now the strips have to be adjusted properly onto the calibre and stuck together by using wood glue. Potentially remaining unevenness can be compensated with the help of sandpaper. The bracings have to be proportioned according to box size requirements. For heavy goods transport additional cross stays – so-called bucking bracings - probably have to be added to the side parts, if necessary.
Then the base plate and the side and head plates have to be glued together. The top cover won't be glued in order that the interior of the boxes and its payload is remaining visible during loading scenarios.
Fragile payload should be stored with straw wrapping – finest wood shavings or correspondingly coloured landscaping material are working perfectly for model use.

The additional option of nailing up the boxes can be achieved by drilling finest holes into the outer cross bracings and filling them with 0,2 up to 0,4 mm pieces of wire. Subsequently they have to be cut to length smoothly. On the contrary, original boxes oftentimes are nailed up from the insides, which cannot be caught by anybody's eyes in the model execution.

Subtitle:
Treatment in terms of colour

Since the elaborately manufactured carrier boxes often had been reused in former times also weathering patina can be applied, as required. The easiest way of doing this is to dip the whole box in a vessel, which contains a dilution of cleaning solvent and mat black colour. The degree of weathering can vary depending on the used amount of black colour. After drying brightening traces are applied by using an almost dry brush and white acrylic paint. The colour has to be rubbed in afterwards with the help of a cloth.

Make sure not to forget attaching the shipping label on the box: otherwise the contents may be delivered to the wrong receiver!

Bill of materials:

- Pine strips in corresponding sizes (see text)
- Cleaning solvent
- Black paint (e.g. Humbrol)
- White acrylic paint (e.g. Anita-Decor)
- White wood glue (e.g. Ponal)

Box:
Further information is available at: www.paj-modelbouw.be or patrick.dalemans@pandora.be. A small edition of boxes can be obtained at the Lokladen, Bingen at: www.der-lokladen.de

Picture headers:

No.	Text
1	The simple calibre with all components for the box
2	The completely glue-laminated parts of the box
3	Side parts und base plate are glued together
4	The completely glue-laminated box in its natural state
5	After a corresponding weathering and furnished with straw wrapping the box is giving an authentic impression
6	The box in use: in this box harvester tools and equipment is stored
7	Box usage of a different kind: it needn't always be transport assignments!
8	Oops, something went wrong … frequent 012-EXPRESS readers may be aware of this scenario

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Category:
Modelling

Bar:
Semi-relief buildings for gauge 2

Header:
A movie theatre frontage

Intro:
Using the example of a cinema frontage Hans-Joachim Neumann describes how semi-relief buildings can be put in the spotlight in a striking way – a do-it-yourself construction and almost for free

Author and pictures: Hans-Joachim Neumann

Anyone who is building larger scaled model railway landscapes will appreciate every extra centimetre of layout depth. This applies to gauge 2 all the more unless the layout is built outdoors. That is why the background of the layout is especially important in order to achieving a visually appealing depth effect. This can be accomplished by choosing suitable themes and a skilful implementation of a photo wallpaper, installed in the background. Joachim Wischermann for example, offers almost all scenarios (www.modellbahn-hintergrund.de). His range also includes semi-relief buildings made from laser-cut cardboard in different scales, also in gauge 2. The company Faller/Pola from Gütenbach is offering – hopefully they also will in the future – semi-relief townhouses made from polystyrene. All five offered types of houses up to now are equipped with quite appealing frontages.

If anyone still wants to design a row of background houses for his layout individually is free to create a frontage according to his own imagination out of spare part box reminders and construction set leftovers. On my own layout I intended to fill the gap between a front of row houses with a suburban cinema.

Subtitle:
Cinema frontage serves as gap filler

A sort of skeleton is the original relief houses by Faller/Pola, where the frontages can simply be mounted via hook and eye in-between the buildings. The frontage of the house is consisting of 2 cm Styrodur, the roof is a finished product out of the model railway accessory supply.
Window, doors, guttering, rainwater pipes and other small items can be taken from surplus injection-moulded parts out of construction sets.

Especially for the assembly of the cinema frontage some characteristics have to be considered. During the 60s the entrances of shops and cinemas were mostly rounded and the shop-windows were frequently integrated in the rounding. The back walls of the shop-windows simply have to be dislocated to the rear by around 10 mm since nothing else but movie posters are shown. The windowpanes for the rounding are made from cut parts taken from a small 0,25 litre PET beverage bottle. That way no round bending of flat and

translucent cellophane plates with a usual thickness of 0,5 mm will be necessary, which would be very difficult at narrow radii like this. The same applies to the cash desk.

Particular attention should be paid to the various movie posters. Only movie announcements of that time should be used. On the web page „Closeup“ (www.closeup.de) reams of movie posters are offered. If you use the search box for the term „Rühmann“ the movie poster of the famous and well-known movie „Feuerzangenbowle“ will be displayed. A scaled-up size of the poster is shown when clicking on the indicated picture. Printed out via a colour printer a 10 x 8 cm model movie poster will be available for free. By the way, a registration is not required in case of such “private activities” and no fees will be charged. The large number of posters offered here leaves nothing to be desired.

Other signs, such as small announcement banners like for example “on Saturday and Sunday only”, “Preview” or “Today at 5pm and 8pm” can easily be put into practice with the help of a personal computer or transferable letterings.

In order to let the cinema look like the cultural heart of a suburban town in the 60s, even in the dark, it is absolutely necessary to arrange for a corresponding illumination. Therefore the model has to be equipped with individual lights for the shop window, the entrance area, the cash desk as well as the outdoor advertising and street promotion. This can easily be done using the small 12Volt bulbs, which are used for the illumination of H0 buildings.

Finally, the movie audience has to be positioned at the appropriate places. Have a good time!

Picture headers:

No.	Text
1	The gap in the row of houses, which needs to be filled; apparently the first cinemagoers are already waiting impatiently!
2	Small parts out of the spare part box are serving for furnishing the frontage
3	The frontage of the cinema is made from Styrodur – here the rear side is shown, which simply has to be hooked between the existing houses
4	Clearly visible at the side: the hangings; the “CINEMA” sign is already mounted
5	Rear side of the row of houses after the cinema frontage has been integrated
6	Rounded corners are characteristic for shop windows in the 60s; the self-made posters are making the scene look authentic
7	The gap is filled – the dim light is producing a beautiful effect –let’s go and watch the “Feuerzangenbowle”!

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Category:
Info-Express

Bar:
The 5th Module Meeting in Heilbronn

Title:
Gauge 1 meets scale 1:1

On the weekend of the 12th and 13th September the Süddeutsche Eisenbahnmuseum (SEH) again organized the great Steam Engine Festival. In hot summery temperatures the popular treasuries of the museum were shown to the general public. And whenever the locos were revolving on the turning platform or being pushed back and forth with the help of the museum team in order to arrange them for the scores of visitors and photographers all involved persons were visibly pleased. But the real highlight was the opportunity of riding on the ad hoc steamed up loco.
The module builders and gauge 1 friends headquartered inside the cleared loco and wagon hangar. For the fifth time in a row railway modellers from all over Germany came together and flaunted with a considerable layout size. Covering an area of 68 x 10 square metres, built with more than 200 individual modules and a track length / driving route of more than 600 metres the smart gauge 1 exhibits and long train sets could be gazed at.
Where else is it possible to draw a side-by-side comparison between „Original and Model“. In Heilbronn, however, the small gauge 1 locos didn’t have to hide from the large giants!

Rüdiger Otahal

Further information:
www.seh-sueddeutsches-eisenbahnmuseum-heilbronn.de;
www.ig1.de

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Category:
Info-Express

Bar:
KS-Modellbahntage in Stromberg

Title:
Everybody is surging to Stromberg

From 19th till 20th September the multi-purpose hall of Stromberg (Hunsrück) once again was the place where the real meaning of railway modelling was shown: meaningful recreation activity without regimentations by organizations.
Approximately 10 model builders, who had connected their individual modules together, were gathering around the hall manager Karl Stümpfl. The gauge 0e exhibition, where very beautiful sections and worth seeing forwarded goods were to be seen, was already filling the most part of the hall. All building phases of a modular layout, from the foundation up to meticulously replicated original scenarios were shown here. This is what differs model-building events like this from giant trade shows.
The gauge 0 and 1 community in Germany is growing and not only insiders do consequentially notice that large gauges have a lot more to show than for example gauge H0.

Some dealers and manufacturers were also represented in Stromberg. They did not only show their models but also demonstrated model making.
The company HEGOB for example commemorated how a Märklin serial model in gauge 1 can be spiced up significantly with the help of accessory parts. Worth-seeing model making in gauge 0 was shown by Peter Jung and Mr Simat (gauge 0 and 0e).
At some stands railway literature and railway as well as model railway second-hand goods were offered. Even reasonably priced brass etching parts for building a small steam locomotive could be purchased here.

In the afternoon I was able to watch some visitors who were proudly carrying their purchased “treasures” to the parking area very carefully - what more could one want?

Franz Stellmaszyk

Picture headers

No.	Text
1	The goods loading platform at the layout of Peter Jung, which still is under construction
2	A detail of the modular layout in Stromberg

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Category:
Info-Express

Bar:
The ARGE Weser-Ems Large Gauge Meeting

Title:
0 and 1 are meeting in Sande

On 26th and 27th September the ARGE Weser-Ems has invited to their annual meeting. This time we approached Sande on Saturday.
In the former Marinewerft-Siedlung it already was quite difficult to find a parking space and therefore a well-filled hall was to be expected. In fact, after we had passed the cash desk we almost didn't get any further, all gauge 0 and gauge 1 fans were standing around the layouts densely packed and talk shopping. It seems that the interest in railway modelling still is unwaning, especially in the large gauge sector! It also was pleasing that a lot of younger potential customers were present whose integration seemed to work out fine.

In Sande the largest stationary gauge 0 layout in Germany is shown. The former gym has a size of 25 x 40 metres, which is filled by this layout up to 80 per cent. No matter which gauge you belong to – it really is incredible to gaze at a layout, which has to offer so many perfectly designed train stations and beautiful route sections. The train stations have been built by the individual club members and they are in a very good condition, technically and optically, which unfortunately does not apply to all club layouts. Acquiring possessions on one section of the layout – usually a station with entrance zone – and the interest in improving and ensuring the functional reliability seem to be a good solution for a club layout. Also in case one station is forwarded to another club member this doesn't cause any problems. Consequently building the train station Zetel – a small town along the route Varel – Wilhelmshaven will be continued after change of ownership, which is absolutely according to the original! An already existing boat train station ought to receive an extension, too.

With so much dedication it is not astonishing that the last weekend in September became a fixed date, at least for North German gauge 0 enthusiasts. This also has gotten around among the dealers. This year Sande had to offer already 24 smaller and larger stands, where models, accessories and second-hand goods could be purchased.
In gauge 0 the VT135 / VT70.9 by J&P from Dresden was presented to the public here and on its first-time operation it was heading to almost every existing train station. This model really left a mark, visually and in terms of driving characteristics.

Also the gauge 1 sector aroused a strong interest again – here a route longer than 40 metres with Rw, two terminal stations and a through station for train operations with up to 10 two-axle vehicles or 5 express train wagons was shown.
Hartmut Stöver once again came with an exemplary goods train; a real treat for goods wagon freaks in all gauges. The excellently detailed Hübner, KM1 and Dingler wagons were not only refined and corrected in terms of details, also the loading was unique. We were excited about an authenitic load of cut peat from real turf, which was created in a time-consuming way.

Anyone who knows Hartmut Stöver personally is aware of the fact that he is very particular about model implementations. Therefore all wagons are weathered according to original pictures and fit with chalk inscriptions.

Due to time constraints Helmut Schemmel was not able to present his modification of his Kiss 01 in the finalised state of revision but what he has to show so far was quality at highest level.
We were especially pleased to watch two scholars, a boy and a girl, who obviously had a lot of fun while operating at the gauge 1 layout. The ARGE in Sande is ageless!

Klaus-Gerd Schoeler

Further information:
www.spur-1ns.de

Picture headers

No.	Text
1	The gauge 0 layout in Sande has grown: the reception building at Zetel station is already finished
2	A gauge 1 Spur1 O wagon loaded with (real!) turf; noteworthy: the weathering and the authentic chalk lettering (more on this can soon be read in the 012-Express)

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Category:
Info-Express

Bar:
Modell-Hobby Leipzig 2009

Title:
On land, on water and in the air

Once a year in October the Leipzig exhibition centre is turning into a Mecca for all railway modellers and model builders, creatives, players and gatherers. And also for those who are curious to give it a try, to operate, to navigate, to build, to paint, to play, to tinker and to create – this is the right spot. On an exhibition space of 70,000 square meters not only freaks did find inspiring things and news concerning their hobby. 630 exhibitors were offering the whole range of model making. The visitors could admire the branch novelties or get involved themselves while attending a workshop. Whether kite building, airbrush use, creative tinkering of decorative objects, action games, model railways, airplane models, ship models or RC model making – there was a lot to discover for all ages. With good reason the subheading of the Modell-Hobby Leipzig is: „creative handicraft work and discovering the world in microcosm!“
For railway modelling enthusiasts Leipzig was offering two reasons to celebrate, since not only the presented exhibits but also the approach to the fair grounds was an adventure.
On Sunday the East Saxon Eisenbahnfreunde organised a ride on the 44 year old LVT train from Löbau to the Leipzig fair. On Saturday the visitors had the chance to arrive at the fair with full steam via an excursion train and the 18 201, coming from Berlin-Schöneweide, which had been organised by the „Traditionszug Berlin e.V“.

In the model railway hall the original BR99 could be gazed at amongst others.
Although the various exhibited model railway layouts were the real crowd pullers. For all large gauge enthusiasts the “Spur 1-Modellbahnfreunde Leipzig” (MEV Friedrich List) presented a branch line modular layout on a small space. Here Matthias Wirth demonstrated in a spectacular way, that big things are coming in small packages. The BDEF showed a larger oval gauge 1 layout.

The very young visitors were giving proof of their talent on occasion of the SIKU drawing contest. Among other things the white tractor models were busily painted. The kids were allowed to take the models home afterwards in order to taking a picture and entering an interactive contest on the SIKU website. Really a great idea for promoting young blood!

Rüdiger Otahal

Picture headers

No.	Text
1	A gathering crowd of visitors in the exhibition halls at the Modell-Hobby Leipzig

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Category:
Info-Express

Bar:
Euromodelbouw Genk 2009

Title:
Modelbouwplezier

The announcement of the „Hoeseltse Treinclub“ is promising more than 10,000 square metres of model building pleasure at the 10th and 11th October 2009 at the Genk Limburghalle (Belgium). It is not the frequently mentioned dimensions that are responsible for the quality of such an exhibition – the adventure is the quality of the exhibits alone. Only those who are having the opportunity to visiting model railway exhibitions all over Europe – like I do – is able to find out how different railway modellers are forming their raw material into worth seeing products.

The chairman of the „Hoeseltse Treinclub“, Danny Smeets, is not only working with a well-balanced team where also the wives are engaged – he also presented a selection of extraordinary clubs this year.

In almost all gauges an impressive grade of quality was present and in the end every exhibitor would have deserved a trophy. But the best way of gaining recognition still is the satisfied visitor. Hundreds of working hours are rewarded by the visitors' interest and their positive feedback.

It is obvious that beyond Germany predominantly hand-made model building is practiced. The results of these workings are reflecting the real skills of the constructors in an impressive way. In Genk the most magnificent landscaping constructions with moderate railway sidings and individual train sets were to be seen. My overall impression can be summarized as following: “the crème de la crème”.
Some Hobbyists achieved amazing results from materials such as cardboard, paper or wood. Working with these materials the individual skills are reflected in imagination and creativity. From crinkled cardboard, for example, deceptively real-looking corrugated metal sheets for house and roof constructions can be built.

The Euromodelbouw is a modelling fair. Of course not only railway layouts but also the divisions airplane, ship and car modelling were represented here. Various dealers and manufacturers, who offered their complete range or components and accessories, were also present in Genk, which rounded out the positive overall picture of this exhibition. Visiting this modelling exhibition, which is far from being an insider tip, surely is worth it!!

Franz Stellmaszyk

Picture headers

No.	Text
1	As always the PAJ shows “modelling at its best”: this picture shows the new gauge 0 project „Altbachheim-West“
2	A gathering crowd of visitors attended the model railway layouts, like it is shown here: the layout „slate, gravel and records“

Category:
Info-Express

Bar:
Internals

Title:
Price adjustment as from 2010

Dear readers,
With the 12th issue of our magazine we are celebrating a sort of our own 012-EXPRESS anniversary. We really made it, already three years in a row – we managed to provide you punctually with your 012-EXPRESS in a three-month-rate, sent to your home, to your station or airport bookshop or your newspaper kiosk. Our idea of creating a high-quality magazine exclusively for gauge 0, 1 and 2 worked out fine and we want to thank you all for your support. The lively interest, whether at respective forums on the Internet, in letters to the editor or on occasion of face-to-face conversations is encouraging us to proceed on the chosen track.
In order to provide you with the usual range and quality of our 012-EXPRESS in the future we now have to adjust the price to increasing costs.
As from 2010 the individual issue will be sold for € 11,20 (previously € 9,80) (abroad: Austria € 11,90, Switzerland: sfr 19,60). For subscribers the price will be € 8,90 (previously € 7,80) including shipping. Shipment to foreign subscribers will be charged separately as before.
We appreciate your understanding and we hope you will keep on enjoying our magazine.

Your 012-EXPRESS Team

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Category:
Info-Express

Bar:
Events - Schedule

Subtitle:
Epiphany Meeting in Ingolstadt

From 8th till 10th January 2010 the EMF Ingolstadt is inviting to their traditional „Epiphany Model Railway Exhibition". Because of space requirements this time the meeting will take place in the **Nibelungenhalle in 85098 Großmehring, Dammweg 1**.
On approximately 1,000 square metres scholar layouts from Bavaria and Baden-Wuerttemberg, model railway layouts from different clubs as well as clubs' own layouts will be shown, among others in gauge IIm (LGB), gauge 1 and gauge 0. In gauge 1 a completely new designed club layout will be presented to the visitors.
Of course the watercolour pictures showing railway motives will again provide for a special atmosphere.
Visiting the exhibitions will give the opportunity to acquire a past-Christmas gift at the stands of dealers and manufacturers in order to enlarging the Christmassy model railway.

Opening hours:
8th – 9th January 10am – 6pm, 10th January 10am – 4pm
Info: www.modellbahnfreunde-ingolstadt.de

Subtitle:
World of model making in Osnabrück

At the 28th February 2010 the exhibition "Welt des Modellbaus 2010" will take place at the Autohaus Härtel, Mindenerstraße 100 in Osnabrück. The Eisenbahnfreunde Osnabrück will again present an interesting and versatile programme all about gauge 1. For the first time also an insight into gauge 0 will be provided. For an overview of all activities and exhibitors please refer to the website of EFO:
www.eisenbahnfreunde-osnabrueck.de

Opening hours:
28th February 2010 10am – 6pm
Info: klaus.broemstrup@osnanet.de

Subtitle:
Gauge 0 Days in Buseck

For the 11th time the scale 1:48, 1:45 and 1:43,5 modellers will meet in Buseck near Giessen. Whether standard gauge or narrow gauge, there will again be lots of layouts and dioramas, which can be gazed at. Amongst others Mr and Mrs Zieger from Berlin already accepted the invitation and will show their worth-seeing all-around layout. Meanwhile Buseck surely is a traditional place of location and the most important meeting of gauge 0 enthusiasts in

Germany. In addition to various layout exhibitors also a large number of dealers and manufacturers will be on the spot. Several model-making workshops will round out the programme. This surely is a worth-seeing event, not only for gauge 0 modellers!

Opening hours:
20th March 2010 10am – 6pm, 21st March 10am – 4pm
Info: www.busecker-spur-0-tage.de

Further events:

Until 20th December 2009:
47. Leipziger Modellbahntreffen
Auf dem Augustusplatz
04109 Leipzig
daily 10am – 7pm
MEV "Friedrich List" Leipzig e.V. Tel.: +49 - 341/6993920
Info: www.mev-friedrich-list.org

8th – 10th January 2010:
Echtdampfhallentreffen in Karlsruhe
Info: www.echtdampf-hallentreffen-messe.de

4th – 9th February 2010:
Toy-Fair Nürnberg
Info: www.spielwarenmesse.de

25th – 28th March 2010:
Faszination Modellbau in Karlsruhe
Info: www.faszination-modellbau-messe.de

Correction concerning 012-EXPRESS Issue 11:
Contact address Spur 1-Freunde Südbaden:
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Preview

Layouts:
0 enlarged:
News from Quay No. 8

1 enlarged:
News from „Schwabstadt“

Vehicles:
Newly-created:
The twin 50 in gauge 1, part 2

Showcase:
News from Nürnberg:
Large gauge report from the Toy Fair

Modelling:
Wildeshausen in UK:
Self-construction of an engine shed

Small but nice:
Track observer in gauge 0

Sophisticated:
Weathering of vehicles

Test:
Powerful loco:
Series 03 by Kiss

… and further topics from the large gauge scenery…

For currency reasons some articles may be postponed

Imprint:

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Coupon:

Annual subscription € 35,60, including shipping throughout Germany and € 48,10 (EU-countries and CH)

Individual issue 9,80 € plus shipping, as from issue 1-2010: 11,20 € plus shipping